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ABSTRACT

This interim criteria document provides descriptive information and planning, evaluation, and design guidelines for children's play areas located on military bases. The recommendations are presented in two major sections: planning & architecture design. Subcategories within the planning, criteria, and recommendations section address program master planning, physical master planning, physical planning decisions, and architectural program development process. Design recommendations subcategories address site organizing principles, patterns of activity spaces, general design of play spaces, and site details. The recommendations are presented as a series of "patterns," each suggesting a different design idea in response to children's needs and the research information collected, and each further specifying detailed design criteria. A summary of important planning and design issues and recommendations, and an introduction to new ways of thinking about children, their play, and the role of the physical environment in child development and play precedes the actual recommendations. (GR)

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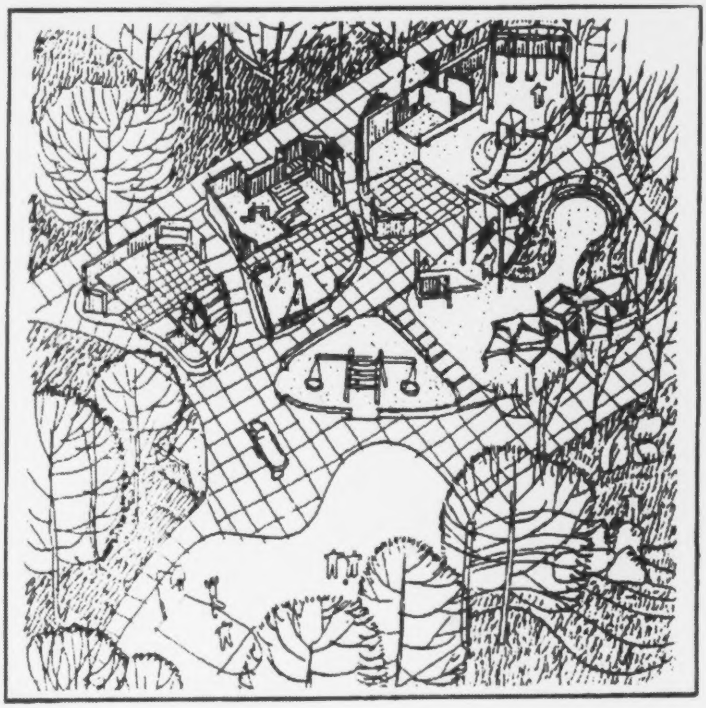
RECOMMENDATIONS FOR CHILD PLAY AREAS



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Task III(a1) of Contract No. DACA73-78-C-0005

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PREFACE AND ACKNOWLEDGMENTS

This document is a joint product of the Center for Architecture and Urban Planning Research, University of Wisconsin-Milwaukee (UWM), and the Community Design Center, Inc. of Milwaukee (CDC). The document was prepared as part of Task III, Criteria and Literature Search and Analysis, of Contract No. DACA73-78-C-0005 between the U.S. Department of the Army, Office of the Chief of Engineers, and CDC, Inc. and its subcontractor, UWM.

The planning and design criteria were prepared and written by Uriel Cohen, Ann B. Hill, Carol G. Lane, Tim McGinty, and Gary T. Moore.

The overall goal of the Environments for Play and Child Care Project is to develop a new design guide and technical manual for the planning and design of child support facilities and outdoor play areas on U.S. Army bases around the country. The current task is a part of that overall objective. This document is one of several interim reports.

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INTRODUCTION

PROBLEM AND PURPOSE OF THIS DOCUMENT

This interim criteria document provides descriptive information and planning and design guidelines for children's play areas.

The new Technical Manual will provide the criteria to govern the planning and design of children's play areas on military bases and aid in evaluation of such designs.

The manual will be directed towards improving early design decisions and towards the development of realistic, cost-effective solutions in conjunction with the Army regulations and DOD criteria referenced herein.

This manual is also intended to provide general guidance for using service personnel and Corps of Engineers field offices in planning facilities for inclusion in military construction programs.

It is expected that using service personnel will find additional use for this manual in developing improvements or in better utilizing existing facilities.

The uses of this document will vary depending on the user and objectives. Prospective users include:

- Facility Review Office, Master Planning Office, Army Corps of Engineers
- Base Master Planning Office
- Community Services Branch on Base
- Director of Child Support Services/ Child Play
- Steering Committee for Planning/Community Participants/Facility Advocate
- Facility Staff/Play Leaders
- Facility Architect/Landscape Architect
- General Services Administration

Potential uses of this document are:

- Informing the uninitiated and stimulating interest
- Communicating basic policies
- Communicating planning and design criteria
- Identifying formats for developing specific architectural programs for particular sites
- Providing evaluation criteria for both design and post-occupancy evaluation studies
- Evaluating product information

The scope of this document is applicable to all new construction projects for children's play areas on military installations. It is also applicable as general guidance to projects involving the modernization of existing facilities.

While this is the basic criteria document for Army play areas, it is not intended to provide all of the information required for successful preparation of project designs.

Additional information must be obtained at the installation level which identifies the unique requirements of local activities and the locational constraints and opportunities of specific sites.

This document, however, presents the overriding planning standards and design principles and criteria which will both guide the preparation of a facility program and the overall direction which design solutions take. It is applicable for the planning and design of new children's play areas and the improvement or modernization of existing ones at the following locations:

- inter-service regional parks
- base-wide parks
- neighborhood parks
- school grounds

- recreation centers
- shopping centers
- child support facilities
- housing areas, including the design of housing itself
- links and networks of play among the above

As this is an interim report, we invite your review and comments.

METHODS USED TO DEVELOP THE CRITERIA

The planning and design criteria contained in this report are derived from a process of information gathering and design based on our earlier work in this field (see Moore, 1975; Moore and Rose, 1976; Cohen, 1978; Cohen and Moore, 1977; Moore, Cohen, and Team 699, 1977; Moore and Cohen, 1978; Moore and Shaw, 1978; and Moore, Cohen, Oertel, and van Ryzin, 1979, in press).

Basically the process has three stages:

- the identification of significant issues about human behavior relative to the physical environment, e.g., the child's need for stimulating outdoor recreation environments close to home
- review of existing scientific literature bearing on each identified issue, together with review of our own research on child-environment relations, our professional experience, and the results of Task II of this contract, Travel and Research on 50 bases and civilian facilities around the country, e.g., the finding that most children's outdoor recreation occurs in the left-over or undesignated spaces immediately around the home
- induction of a design idea in response to the information on each issue, together with the specification of particular criteria and recommendations, e.g., the design idea of a "network of play" together with specifications about the character of nodes and links of the network

The final result of this process is a set of 15 major planning recommendations and 56 design patterns, each with supporting research-based information and detailed criteria. Each major planning recommendation and design pattern is comprised of three parts, corresponding to the above three steps in the process:

- behavioral issue being responded to
- information gathered, transformed into an argument in support of the resulting design idea
- the recommendation or pattern together with detailed criteria

A comment about the types of literature reviewed as part of the derivation of the design ideas: over 1200 articles and books were discovered which bear on the design of children's environments. Most of these are by particular authors and report on their research or professional ideas about children's environments. Some of them are descriptions of particular facilities and building types.

The most valuable literature was from the interdisciplinary field of environment-behavior studies, focusing in particular on child-environment relations. Examples include studies of the relative developmental value of traditional, contempory, and adventure playgrounds, and studies of children's play behavior in undesignated neighborhood settings.

Other literature of slightly less value is from the child development literature and from architectural magazines. The former tends to be the most rigorous research, focusing often on child behavior without relation to the physical environment. The architectural literature tends to be descriptions of facilities, in many cases without specification of behavior. Thus, again, the most valuable literature is on child-environment relations where both sides of the equation are looked at--behavior and environment.

The last category of literature amassed was publicity brochures from manufacturers and distributors of play equipment. Almost without exception, these brochures were found to be useless.

In order to stay abreast of the latest information on child-environment relations and on architecture for children, the project staff has continued to peruse publication lists for new publications, and subscribes to the major newsletters and journals in the field.

Finally, we have reviewed existing Army design criteria and national and state building code requirements as part of the criteria-generation process.

In addition to published information, the project team has amassed over 2400 slides and numerous black and white photographs of children's play behavior and play areas around the world (including Canada, United States--military and civilian facilities--, Australia, Germany, Sweden, England).

All of this information is catalogued and stored in the Child-Environment Information Resource Center in our project offices. This Center is open to the public, and requests for information are filled as time permits.

Selected abstracts of authoratative literature with complete bibliographic references are included in Part III(b) of this task (see Hill, Lane, and others, Abstracts on Child Play Areas and Child Support Facilities, Task III(b).

ORGANIZATION AND USE OF THIS DOCUMENT

Basically this document is oriented around a series of planning and design recommendations for children's play areas. The recommendations, are subdivided into a number of categories, as represented in the Table of Contents and the accompanying matrix. A summary of important planning and design issues and recommendations and an introduction to new ways of thinking about children, their play, and the role of the physical environment in child development and play precedes the actual recommendations.

The recommendations are in two major sections--planning and architectural design--and are further subdivided into the following categories:

- 100 Program Master Planning
  (e.g., economics and strategies of implementation)
- 200 Physical Master Planning
  (e.g., determining existing and needed parks)
- 300 Physical Planning Decisions
  (e.g., deciding on particular types of play areas needed, and selecting locations)
- 400 Architectural Program Development Process
  (e.g., developing facility programs for specific play areas to be designed)
- 500 Site Organizing Principles
  (e.g., siting facilities, site design and evelopment)
- 600 Design of Activity Spaces
  (e.g., criteria for the overall design of different types of play areas, sports areas, adventure playgrounds, children's gardens, infant spaces, etc.)
- 700 General Design of Play Spaces
  (e.g., design concepts for the overall schematic design of any of the above types of play spaces)

- 800 Site Details
  (e.g., landscaping materials, drainage, storage, etc. to the degree that these are not standard design and landscape design operating procedures, but rather one specific to the developmental needs of children)

Before using any of these recommendations, the user of this document should review the following sections on children's play and children's play areas.

This document has been produced by a group of research and practicing architects who also have degrees and significant experience in the areas of child development and behavior, environment-behavior studies, and facility programming and evaluation. Their experience spans more than a decade of work on all aspects of children's environments, and has included empirical research, professional practice, and design consulting here and overseas. As a consequence, the following guidelines are based on the developmental needs of children, and they grow out of consideration of child development and the role of the physical environment in facilitating that development.

We are concerned with all aspects of children's play behavior--physical play, social play, and intellectual play. As will be pointed out in the next section, most contemporary American playgrounds do not respond equally to each of these three major areas of children's needs. These guidelines, on the contrary, are in response to the whole organism, not just one part, like physical play.

Use of these planning and design guidelines should assure new, innovative play environments for children which will not only be fun to be in but also will have significant developmental and learning potential.

SUMMARY OF IMPORTANT ISSUES AND RECOMMENDATIONS

SUMMARY OF IMPORTANT ISSUES AND RECOMMENDATIONS

OVERVIEW

The aim of the Environments for Play and Child Care Project is to develop a new set of planning and design recommendations for children's outdoor play areas. The recommendations--though general to play across the entire country--are tailored to the needs of applications to U.S. Army bases.

The recommendations are based on the latest research information in child-environment relations, child development, early childhood education, recreation, architecture, and landscape architecture. This research information was supplemented by case studies conducted by the project team at 52 military and civilian sites across the U.S. and in Canada, and by the project team's previous research and professional experience with a range of different playgrounds.

The document has been prepared for all involved with children's environments on military bases--base commanders, administrators, housing planners, facilities engineers, recreation leaders, child-support services personnel, teachers, architects, landscape architects, parents groups, and all others involved in creating good child play facilities.

The recommendations are presented as a series of "patterns," each suggesting a different design idea in response to children's needs and the research information collected, and each further specifying detailed design criteria.

Highlights of the most crucial overriding issues and recommendations follow.

CHILDREN'S PLAY AND CHILD PLAY FACILITIES

SUMMARY CONCLUSIONS-PLAY DOCUMENT

1. That children's play is as essential to healthy social intellectual and physical development as any other major area of their lives

2. That children need many different kinds of play opportunities to fulfill all their various play needs--social, intellectual, and physical

3. That policies should be adopted stressing the imperative of play and of neighborhood- and home-based play areas for children

4. That an advocate for play be appointed on every base with broad reaching latitude to work with various agencies to implement policies and plans for better outdoor play and recreation for children of all ages (infancy through the teen years)

5. That play leaders be hired to work with children in a variety of play and recreation capacities

6. That children will play anywhere and everywhere, and the entire site must be considered when planning for play

7. That every base should work towards implementing a tiered park system, hierarchically organized from a regional park to several neighborhood parks and playgrounds and many home-based play areas (see Recommendations 200-209)

8. That the kinds of play opportunities provided at a particular play area and its location will be major determinants in the frequency and length of use it receives. . . That the more experiences offered and the more convenient the location to housing, the more use it will get

9. That any architectural program developed for a particular park or playground should be based both on general patterns selected from this document, together with local needs, perceptions, values, and site conditions. . . That the program should be developed cooperatively by all interested parties--parents, base personnel, architects, child development experts, and the children themselves (see Recommendations 300-402)

10. That the programming of design of play spaces should incorporate a variety of different activity spaces for different types of play (structured games, creative play, play with natural elements, water and sand play, quiet play, shared open space, etc. (see Recommendations 600-614, plus 708, 709, and 715-717)

11. That the overall design of a successful play area is not just the haphazard juxtaposition of different activity spaces, but depends on the organization of the total site in accordance with sound site-organizing principles (see Recommendations 500-512)

12. That play spaces designed to separate age groupings are less effective than those arranged to be developmentally appropriate for children of different ability levels. . . That areas designed for different developmental levels should be inter-linked and accessible visually and in terms of movement for children of all levels and ages

13. That play areas which allow children to manipulate their own environment in some way (e.g., adventure play, creative play, environmental yards, etc.) provide for more kinds of relevant play than any other single type of designated playground

14. That the overall quality of all play spaces will be enhanced by good design which responds to a variety of other children's needs (e.g., ambiguity to stimulate fantasy play, loose parts to stimulate creative play, nests for quiet play, retreat and breakaway points to get away from too intense interaction, clear accomplishment points to reinforce the development of self-concept, etc. (see Recommendations 700-722)

15. That landscaping, the design of site details, and the selection of site materials all should be considered with the child in mind

16. That the ultimate success of a play area will depend in some measure on the amount of involvement community members (adults and children) feel in the design and construction process

17. That the set of planning recommendations and design criteria contained in this document represents a comprehensive approach to children's outdoor play, recreation, and learning needs, and that adoption of the recommendations and patterns will lead to the better design of environments suitable for the developing child

THE NATURE OF PLAY

What is play? Why do children play? Is play important or is it superfluous to child development?

Parents, educators, child psychologists, and architects have different assumptions about play and its importance. As the child psychologist, Susanne Millar (1968) says:

> *The term "play" has long been a linguistic wastebasket for behaviour which looks voluntary, but seems to have no obvious biological or social use. . . . Common-sense questions about any human behaviour do need answering. But they have to be "unpacked" before the behaviour can be studied in a way that precludes mere speculation.* (p. 11)

Awareness of the importance of play in the life of the child has grown in recent years to the point where many new programs and environments are being created for children's play. This awakening has come from several thrusts. First, research has shown incontravertably that the playful behavior of children is critical for their development.

The world's most respected child psychologist, Jean Piaget, has pointed out two complementary aspects of development which he termed "assimilation" and "accommodation." These are technical terms for what teachers and parents refer to as unstructured play and structured learning.

Much of the child's development occurs spontaneously from unstructured activities--play--where the child is learning and growing from his or her own initiative, exploration, and discovery.

Learning also occurs, of course, from structured and semi-structured situations as when parents are reading with their child, when child-care workers are showing a child a new set of colors or shapes, and in all school situations.

However, Piaget's point is that optimal development is arrived at by a complementary balance of unstructured play experiences interspersed with times of structured learning.

Research has also shown that the first five years or so of a child's life is the time of most active development. The critical importance of stimulation during these early years has been demonstrated by Head Start Programs. The nation's consciousness has been raised and a growing lobby continues to push for universal early childhood programs. Equal to the need for programs is the need for more and better environments for children's play.

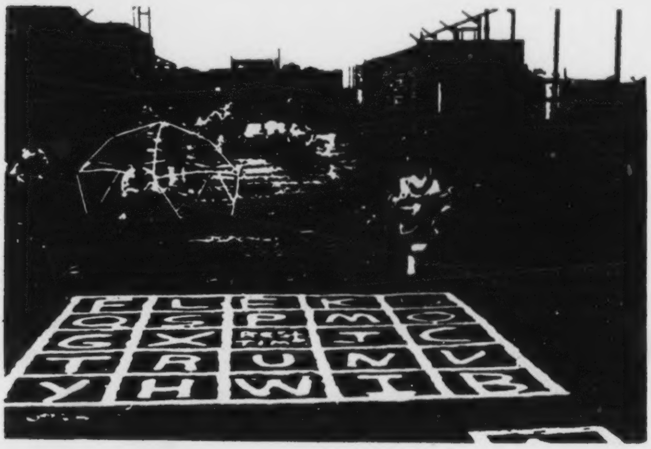
THE HISTORY OF PLAY

Though the importance of play has recently gained national recognition, the history of recorded ideas about play can be traced back to the time of Plato and Aristotle. One can imagine them walking down a narrow roadway underneath Corinthian columns arguing whether play is learned or innate. Plato might say, "Do you not agree that all behavior is learned from the social context?" to which Aristotle might reply, "No, the youngest baby smells and is playful lying in his basket even before learning could occur. Play must be a significant adaptive agent given to all children at birth." Plato was the first to realize the intellectual value of play, while Aristotle saw play as a testing ground for adult social development. Echoes of both these wise views have survived to modern times.

Following the great educational reformers of the seventeenth to nineteenth centuries, from Rousseau to Pestalozzi and Froebel, teachers seriously accepted the idea that education should take account of the natural, spontaneous proclivaties, interests, and stages of development of the child. Froebel was one of the strongest advocates, stressing the importance of play in learning. Recent major thinkers--such as Maria Montessori and Jean Piaget--have been the most articulate spokespeople for this view.

EARLY THEORIES AND POPULAR IMPRESSIONS

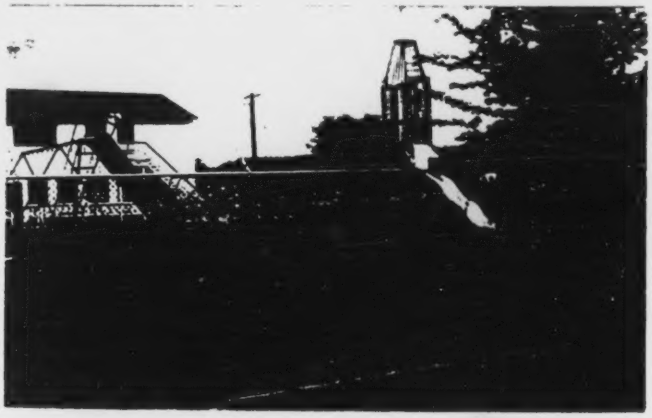
Between the time of Pestalozzi-Froebel and Montessori-Piaget was the rise of the British-German play movement. Schiller and Spencer called play an expression of exuberant energy, and argued that play evolved in the higher animals as they needed to spend less time on keeping themselves alive and thus had more available energy (cf. Millar, 1968). This came to be known as the "surplus energy" theory of play, the basic assumption being that children had to burn off excess physical energy in order to concentrate more fully on the more serious academic--cognitive--pursuits of school.



Parallel with the surplus energy theory was the rise of the German physical education movement which saw physical education as necessary to other types of more scholastic education. With the concurrent division between church and state and between families and schools, this led to the quatro-frication of the individual. Cognitive growth was the function of the school; social development the function of the family; spiritual the function of the church; and physical of the sports club or as an adjunct to the school.

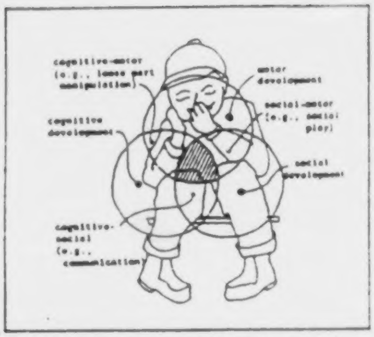
These two influences, then, led to play being seen as related only to physical development and the burning off of excess energy so children could get on with the less playful, structured development offered by the other social institutions.

Unfortunately, although the surplus energy theory of strictly physical play has been discredited (cf. Millar, 1968; Piaget, 1962; Ellis, 1973; Garvey, 1977), it remains as the most prevalant popular conception held by lay people. Many parent groups and even some teacher groups believe that play has its importance in physical growth and/or the burning off of excess energy. Out of this attitude comes the spate of traditional, fixed-in-place play equipment areas which pass for playgrounds.



United States playgrounds and parks for adults have also been affected by the German physical education movement. As a consequence many former holistic recreation parks have been turned into sports fields. "Park" used to connote a comprehensive outdoor naturalistic recreation site for the whole family (cf. Wurman, Levy, and Katz, 1972). Unfortunately, in the lay person's mind, park is often now synonomous with sports playing field. For example, the lovely meadows designed by Olmstead in the center of Central Park in New York City and Golden Gate Park in San Francisco have been entirely taken over by a grid of baseball diamonds.

More recently, articulate voices have been raised for seeing play and recreation as being important to the whole child--to cognitive and social as well as physical development--and to holistic development, not just burning off energy (cf. Piaget, 1963; Millar, 1968; Ellis, 1973; Garvey, 1977). This has led, in turn, to the design of new types of playgrounds in response to contemporary notions of play as integral to full development (see TYPES OF PLAY AREAS AND THEIR LOCATIONS).


cognitive-motor (e.g., loose part manipulation)
motor development
social-motor (e.g., social play)
cognitive development
social development
cognitive-social (e.g., communication)

Basic classification of developmental goals (from Moore, Conen, Oertel and van Ryzin, 1979).

CURRENT MAJOR THEORIES OF PLAY

In order to better understand the importance of play, a brief description of the theoretical frameworks needs to be undertaken.

There are three major theories of play which correspond to the major currents in child development research and theory:

1. psychoanalytic
2. behaviorist learning theory (both social learning and exploration theories)
3. cognitive-developmental theory

FREUD AND THE PSYCHOANALYTIC THEORY OF PLAY

In psychoanalytic theory, the physical environment is seen as an inanimate object on which to (safely) project feelings, e.g., the child may act out anxiety or anger toward a mother who leaves him or her. It also is seen as an inanimate foil for wish-fulfillments no longer compatible with the child's sense of grownupness in adult-like social situations, e.g., using an animal or a playhouse as a subject for fantasies seen as less mature (cf. Searles, 1961).

Play is seen as a source of emotional release, anxiety reduction, compensatory wish fulfillment, and social role playing. Play is wishful thinking, and as such substitutes the world of fantasy for the world of reality. In psychoanalytic theory, therefore, play is seen basically as supporting the emotional growth of the child, and to a slightly less extent his or her social growth.

BEHAVIORISM AND LEARNING THEORIES OF PLAY

Strict behaviorism, either classical al la Pavlov and Watson or operant a la Skinner, deny the existence of anything between stimulus and response. As a consequence, as Millar (1968) points out:

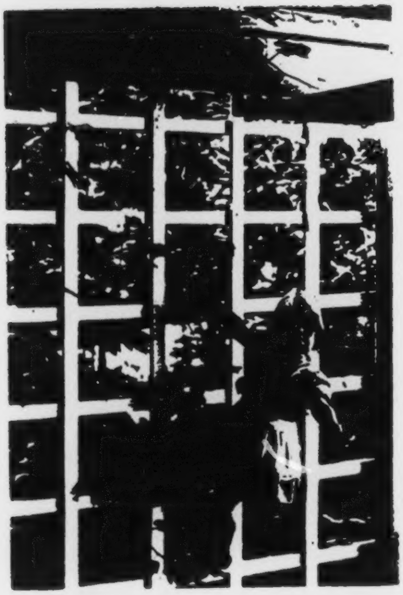
> *The main affect that learning or behaviour theory has had on the psychology of play is that the subject as such no longer exists.* (p. 37)

"Play" is seen as a motley collection of behaviors that ought to be considered separately. A pre-school child chasing a rolling ball is not playing, but is making a generalized response to a small moving object, and will be rewarded for succeeding in the task. Interestingly, this view has many similarities with Piaget's (to be discussed below), but the critical aspect in learning theory is that the child is seen not as spontaneously exploring the world, but rather as totally under the control of reinforcing stimuli and rewards.

Two important variations on this position explore other aspects of play in a learning context. The first, a social learning theory, holds that play is critical to the child's learning of social relations. Play is treated as a learned behavior. As Ellis (1973) points out, this view of play sees the structure of children's behavior as a reflection of the

organization of social contingencies around them. Thus adults selectively reinforce--though perhaps unintentionally--behavior in the child that is socially acceptable. Play is thus an important way of learning cultural rules.

Child psychologist Garvey (1977) has argued that children learn language, social rules, and rituals through play. Tanon (1978) has also argued that play is social practice, a primary way children learn social rules of society. Through play, children learn to integrate different social groups and learn to respect their similarities and differences.



Tanon and many others argue that there are four stages in social play:

1. solitary
2. parallel but non-interacting
3. associative, aware of each other and responding to each other without interaction being the primary activity
4. cooperative play

The role of the physical environment is to stimulate and reinforce cooperative play behavior toward this goal. This can be done by creating spaces for various sized groups, and by designing play equipment which are only fun to play with when two or more children cooperate together.

The second learning-derived theory is the stimulus-seeking theory of Berlyne and his followers (cf. Ellis, 1977). This theory holds that play is in the service of exploration for arousing stimuli. The physical environment plays a definite stimulus role, e.g., novel situations and objects elicit exploratory behavior.

The underlying assumption is that there is a need for optimal arousal and that the child seeks stimulation in order to optimize arousal. The freedom to engage in exploratory behavior is therefore critical for the child, as is stimulation arising from optimal levels of novelty, complexity, dissonance, and/or ambiguity in the environment.

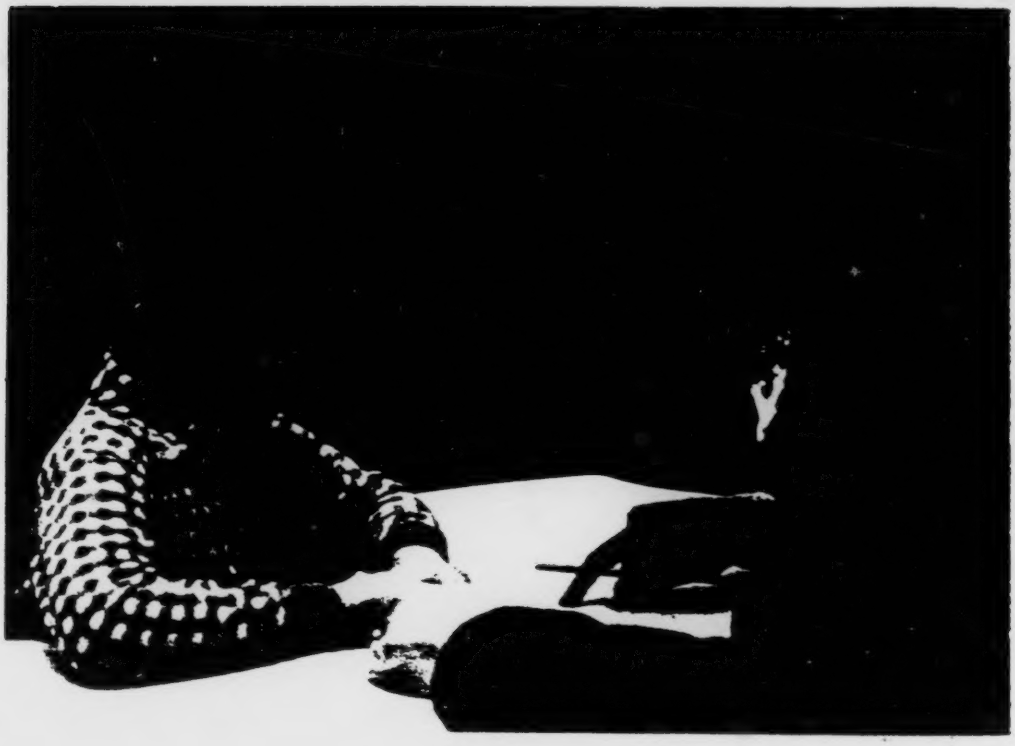
PIAGET AND COGNITIVE-DEVELOPMENT THEORY

The final theory to be highlighted is the cognitive-developmental theory, of which Piaget's thoughts are the best known and most influential, especially on early childhood educators, and more recently, on architects.

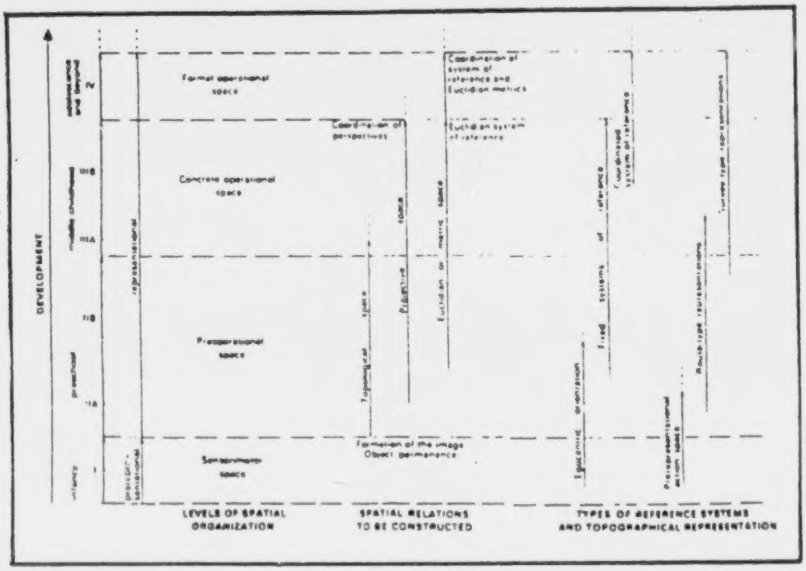
In this theory, the child is seen as adapting to a combination of external and internal demands. The child is assumed to be an active agent, giving direction to his or her own behavior. Play is seen, therefore, as integral to development, and, in fact, play is the complement of more-structured learning.

In Piaget's own terms, play is the relative emphasis of assimilation over accommodation. That is, a child takes in stimuli and transforms them to fit his/her needs at that moment, e.g., fantasy play where environmental stimuli are freely transformed into fantasy objects or situations.

More structured learning, then, is the relative emphasis of accommodation over assimilation. That is, one adapts one's behavior or way of thinking to the nature of the stimulus situation, e.g., struggling to learn a concept being taught by a teacher.



Development always and everywhere involves both assimilation and accommodation; one never works to the complete exclusion of the other. The implication, then, is that environmental situations need to be provided which will provide stimuli for both free assimilation and for more-structured accommodation, and which will provide the freedom for the active organism to freely explore, structure activities, and test ideas. As the child passes through a regular series of stages of development, the environment can provide "aliment" or food for thought and action to help the child progress from stage to stage.


DEVELOPMENT
infancy
preschool
middle childhood
adolescence and beyond
I
IIA
IIB
IIIA
IIIB
IV
preobject - sensorimotor
representational
Formal operational space
Concrete operational space
Preoperational space
Sensorimotor space
Coordination of perspectives
Topological space
Projective space
Euclidean or metric space
Coordination of system of reference and Euclidean metrics
Euclidean system of reference
Formation of the image
Object permanence
Egocentric orientation
Fixed systems of reference
Coordinated system of reference
Presentational action space
Route-type representations
Survey-type representations
LEVELS OF SPATIAL ORGANIZATION
SPATIAL RELATIONS TO BE CONSTRUCTED
TYPES OF REFERENCE SYSTEMS AND TOPOGRAPHICAL REPRESENTATION

From Hart and Moore (1973)
Used by permission

Thus the cognitive-developmental theory emphasizes the need for play areas where the child can impose on reality his or her own conceptions and constraints (df. Ellis, 1971). When, as Nicholson (1971) says, we cease to cheat children's opportunities for creativity, and instead provide them with environments full of dynamic loose parts which can be manipulated physically and mentally, we will have created responsive environments for developmental growth.

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TYPES OF PLAY

Following from the above general conceptualization of play, there are three major types of play, and many variations and hybrids:

1. Physical-motor play
2. Cognitive-intellectual play
3. Social play

PHYSICAL-MOTOR PLAY

This type of play includes opportunities for large-muscle development, both of the structured, game type, e.g., kick-ball and basketball, and of the unstructured kind, e.g., climbing, jumping, running, etc. Small muscle play, and eye-hand and eye-foot coordination are other types of major physical-motor play activities, e.g., playing with small toys, playing with sand or mud, manipulating small, loose parts, etc. Opportunities for the traditional sports games and less-formal ball play, as well as opportunities for climbing, swinging, running, sliding, and jumping should be included with activities of balancing and fine-motor and perceptual-motor activities like repairing objects, making a fishing pole, building tree forts, etc.

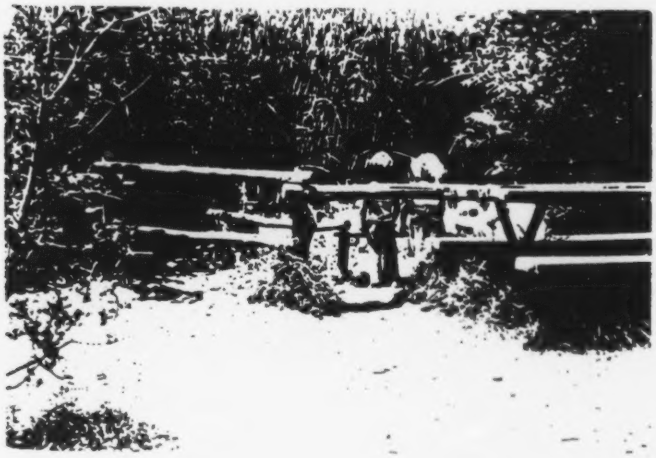
COGNITIVE-INTELLECTUAL PLAY

This type includes any activities in which children manipulate objects or the environment, find out about new objects through any of the five senses, fantasize, create, or solve problems. Make-believe, informal drama, role-playing activities, and fantasy are all important examples. Other activities of this type are exploring the environment, working with gardens or animals, conducting informal experiments, and building things like toy canals, sluice-ways, dams, and power-generators, etc.

SOCIAL PLAY

Social play includes a variety of dramatic and role-playing situations (which are both cognitive and social play), organized games, cooperative projects, and even just talking, walking, and watching the goings-on of other children.

Quiet, reflective play where one or two children withdraw to play peacefully by themselves is also an important aspect of social play.



Play spaces and activities which require cooperation for use are especially helpful for the development of cooperative play from the earlier stages of isolated and parallel play. Any games with rules, whether they be set by tradition, or set by the children themselves as the results of a cooperative process, are examples of social play--marbles, hide-and-seek, four square, hop skotch, even a casual game of catch. Social materials, identities, roles, and plans are all involved in social play.

DEVELOPMENTAL STAGES OF PLAY

1. Sensori-motor play--occupies the period from infancy through the second year, when the child is busy acquiring control over movement and learns to coordinate gestures and perception of their effects. This stage of play corresponds to the sensori-motor stage of development.

Infants derive pleasure from mastering motor skills, from mastering the connections between perception, language, and motor skills, and from experiences of touch, sound, and sight

2. Cognitive, symbolic, or representational play-- predominates after the age of two to about six. During this pre-operational period of development, the child acquires the ability to encode experiences in symbols--images of events can be recalled and combined without the concrete event or referent for the event needing to be present. A child may begin to play with words, images, pictures, and symbols and their combinations, pretending, for example, to fill a nest with eggs while piling marbles in a doll's hat. Findings from many studies indicate that ambiguity in the environment encourages this type of fantasy and make-believe play (see the design pattern 701 AMBIGUOUS SETTINGS AND OBJECTS).

3. Social and rule-oriented play -- the third and final stage of the development of play, this stage occurs during the school years, and evolves around the variety of games children play which involve social concepts of cooperation and competition, rules, rituals, etc. The child has begun to understand the ways of social groups, of different points of view, and of the reciprocal nature of social cooperation. This stage in play corresponds to the concrete operational stage in the overall development of the child.

At each period, the respective stage predominates in children's play, but the other types of play are still present and need to be provided for in both programs and facilities. In order to encourage the child's development from sensori-motor to social play, and more importantly the integration of all three, the environment needs to be progressively structured towards social-cooperative play involving sensory experiences, motor tasks, and cognitive-intellectual challenges.

CONCLUSION

In a major address at the Seventh World Congress of the International Playground Association, Valia Tanon, a Swiss child psychologist and associate of Piaget's, argued against any one, singular theory of play. Pointing out that theorists often separate theories--as above--into physical, intellectual, and social theories, she asked, "How much longer must we wait to break away from scholastic ways of learning?"

The above review of major theories of play is not an attempt at a scholastic categorization of theories as much as it is meant to point out the numerous reasons why children play, the varied types of play they engage in, and the importance of that play to their overall development.

Thus, we see that play is integral to overall child development, that it is not just the burning off of excess energy, but that it is a natural complement of more structured learning situations. We also see that play is significant for the child's cognitive, emotional, social, and physical development. It is important for the child's being able to deal with emotional situations, including dealing with family conflicts. It is important for the child's learning of social rules, rituals, and customs of his or her society and culture. It is important for exploratory behavior and for cognitive development.

TYPES OF PLAY AREAS AND THEIR LOCATIONS

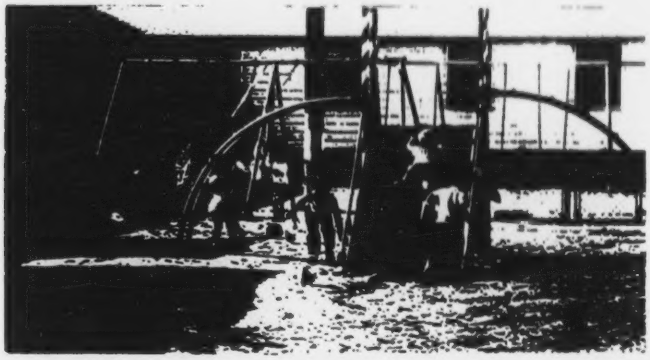
There are several types of playground currently in existence. For convenience in discussion we will use the names given in most of the literature. Obviously, a playground may actually be a hybrid--a mixture of several generic types and may thus share the virtues and/or sins of each.

TRADITIONAL/CONVENTIONAL PLAYGROUNDS

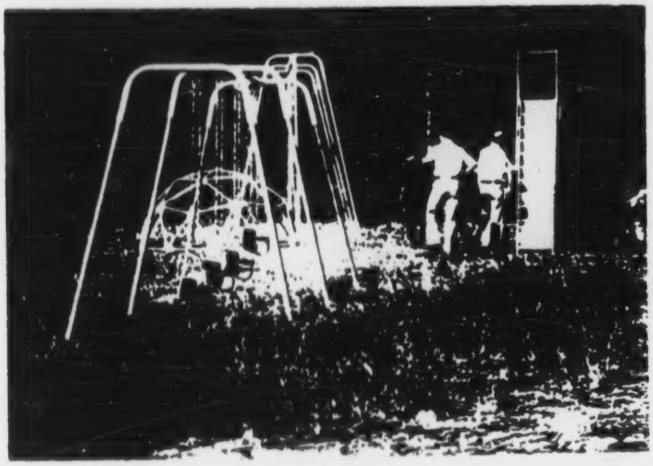
The type of play area seen most often, relying heavily on standard equipment selected from catalogs by administrators, community groups, teachers, etc. This equipment may be metal or wood. The equipment is generally single-use and intended for large muscle activity.

Pros

- Research has shown that traditional playgrounds provide for large muscle activities and motor development.



- The equipment can present a strong play image immediately indentifiable to children as "their place."
- Children rate swings and slides as two of their favorite activities in such play areas.



Cons

- Safety, especially with usual metal equipment, is at a comparatively low level. Hard swings, free-standing slides, teeter-totters, monkey bars all can be very dangerous. In fact, in a National Electronic Injury Surveillance System list of accident frequency related to 105 consumer products, playground equipment ranked as number 8 (Sweeny, 1977).
- Traditional playgrounds do not provide for cognitive and social play, although these kinds of play may occur as a by-product (Hayward, Rothenberg, and Beasley, 1974).
- Traditional play areas are not as popular with children as contemporary and adventure play areas. Of children questioned at each play area:

  At traditional: 15.4% prefer traditional

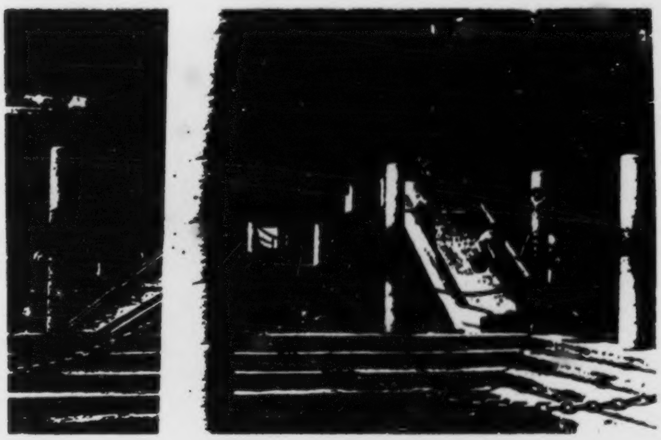
  At contemporary: 55.2% prefer contemporary

  At adventure: 75% prefer adventure (Hayward, Rothenberg, and Beasley, 1974).

At peak hours, two studies found traditional play areas vacant 88% of the time (Wade, 1968; Dee and Liebman, 1970, quoted in Hayward, Rothenberg, and Beasley, 1974).

CONTEMPORARY/SCULPTURAL PLAYGROUNDS

Generally planned as "one-off" designs by architects or landscape architects, these play areas are less numerous and more costly. They may be recognized by the sculptural quality of the landforms and equipment. Contemporary playgrounds are usually fairly static--nothing moves except the children. They can have special features such as water jets, climbing hills, slides built into berms, tunnels, etc.



Pros

- Usually very aesthetically pleasing. Adults enjoy having a play area like this in the neighborhood.

- Children may be attracted by novel features--water is a great attractor.

- Places for social play, watching, retreat and quiet play are more evident than in the traditional play areas.

- Use of plants and trees can be especially pleasant for children and adults.

Cons

- Because of large moldings of concrete, earth-shaping, etc., this type of play area can be very expensive.

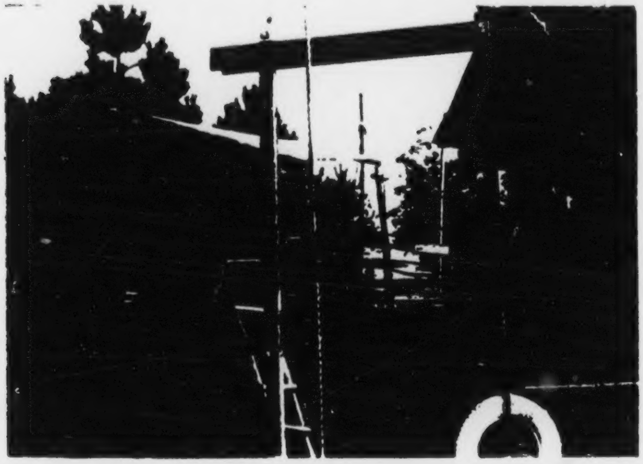
- Some of children's favorite large muscle activity--on moving equipment--is missing.

- Lack of manipulable items for children is a serious drawback. There is no way children can affect their environment. Everything is fixed. Boredom sets in quickly.

ADVENTURE PLAYGROUNDS

The antitnesis of a contemporary play area in that almost nothing is fixed or static, adventure playgrounds require no equipment except tools and "junk" and provide an opportunity for children to create their own play environment. The site requirements include an opaque barrier to screen the "messiness" from adults, play with electric and water hookups and access for delivery trucks.

The money normally spent on equipment and maintenance on traditional and contemporary playgrounds may be used to hire a playleader for an adventure playground. The playleader is an absolute essential for any adventure play program. The leader and the children (and possibly adult volunteers) construct a first hut which will be the base of operations from which the playleader will dispense tools, advice when asked, and from which the playleader will solicit, via telephone, "junk" from any sources available. The children can then build, dig, make gardens, play with animals, do arts and crafts, play games, etc.



Pros

- Children, when given a choice, overwhelmingly prefer adventure play programs to either of the above two types of more conventional playgrounds.
- Children stay longer and come more often to playgrounds with a playleader (Department of the Environment, 1973).
- Adventure play satisfies most developmental needs: cognitive, social, and physical.
- Safety at adventure playgrounds is very good (American Adventure Play Association, 1978).
- Adventure play supports problem-solving, cooperation, and exploration in children.

Cons

- Unless approached properly, the adults will object to the playground appearance and may feel their children are getting second best because they have to play with "junk" (Spivak, 1969).
- Adult participation by parents may be discouraged by children.

- Usually used by school-age children, not younger children, although younger children can learn to use tools (Bengtsson, 1974).

CREATIVE PLAYGROUNDS

Based on values inherent in both aesthetically-pleasing sculptural/contemporary playgrounds and manipulable-environment adventure playgrounds, creative playgrounds offer modular "loose parts" which kids can use to form their own environment. The modular pieces are designed to allow children to create their own playgrounds without the necessity of tools.

Children can also participate in arts and crafts activities and in dramatic activities at creative playgrounds. Creative playgrounds originated in Sweden. The only one in North America is the Harbourfront Creative Playground in conjunction with the adventure playground there (Travel Report, 1978). Use of a playleader and a slant toward younger children are apparent there.

Pros

- Promotes values similar to adventure play.
- More aesthetically pleasing to adults.
- Easily used by very young children.
- Also provides all three kinds of play: cognitive, social, and physical.

Cons

- Modular pieces do not give total freedom of design to children.
- Children don't learn to use tools as they do in adventure playgrounds.

"SPECIAL" PLAY/LEARN ENVIRONMENTS

Designed specifically for non-able-bodied children, these play areas try to provide social, physical, and cognitive play in adapted form. They provide paced alternatives some of which can give the most severly handicapped a sense of accomplishment at play. Typically included are soft surfaces, gentle slopes, sounds, color, tactile changes, and as much variety in sense experience as possible so that all children can enjoy at least some parts. Some "normal" play experiences are adapted, e.g., sand and water play may be in raised tables so that wheelchairs may be pushed under it. Examples of special playgrounds may be found in the work of Leland Show, Richard Dattner, and Moore, Cohen, Team 699.

Pros

- They give handicapped children normal play experiences.
- They provide cognitive, social, and physical play.

Cons

- Separation of non-able-bodied children from other children may be undesirable for both groups (U.S. Department of Housing and Urban Development, A Playground for All Children, 1978).

ENVIRONMENTAL YARDS

Using natural features of the countryside to shape play areas, environmental yards offer unique experiences to children. Plants and animals, flowers and trees, water and dirt, give children a chance to explore their environment, observe life cycles, interact with other living things and cooperate with nature. The yards which exist now are in cooperation with schools (Washington Environmental Yard, Berkeley, California, and Wildwood School Area, Aspen, Colorado). Washington Environmental Yard took a school's asphalt play yard and turned it into an environmental yard. Wildwood School was planned and built underground to preserve a beautiful existing natural environment. Both approaches have worked beautifully.

Pros

- Schools can use yards to help teach values, ecology, biology, botany, color, form, texture, etc.
- Children gain respect for the environment while being able to manipulate and encourage growth.

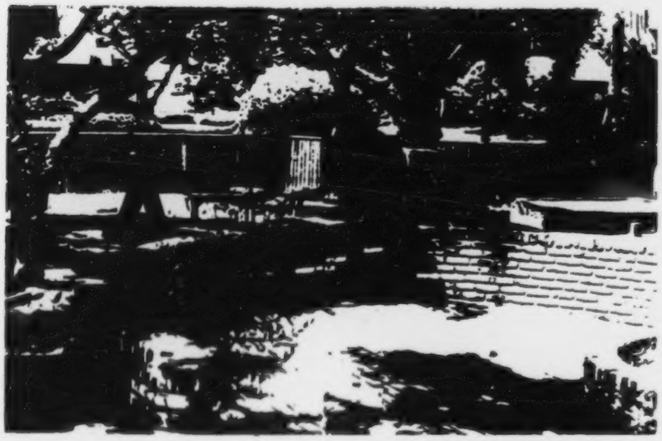
- A yard may be as inexpensive as setting aside an existing natural site.
- Children can find cognitive, social, and physical play experiences in an environmental yard.

Cons

- It may take 3-5 years to develop a yard when starting from scratch.
- Regular care is required during the first couple years until the plants are well established.

INFANT PLAY YARDS

Planned especially for children under 2 years of age, these yards are small, enclosed spaces with many different kinds of sense experiences (colors, forms, sounds, textures) and paced alternatives (e.g., 2", 4", and 6" risers to climb). The one at Pacific Oaks College Infant Care Center (Travel Report, 1978) is raised so that adults on a lower walkway at the perimeter can see infants at child level.



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CHILDREN'S ZOOS, FARMS, AND GARDENS

Special places where children can interact with various animals, domestic and wild, and with cultivated plants can produce many benefits. First, children can relate to animals easily since animals are responsive and non-threatening (Searles, 1966; Alexander, Ishikawa, and Silverstein, 1977). Secondly, children who do not see life cycles in plants and animals loose any concept of life forms independent of man. They believe that everything is man-made--food, lumber, etc. (Piaget, 1962). Thus, they cannot understand their dependency on plant and animal life and their responsibility to conserve it.

Thirdly, the traditional values of pets--companionship and responsibility--are denied some children (particularly children who must move frequently).

Children's zoos or farms are generally in a rather central location. Adult supervision of animal care is necessary whether children help with care or not. Animals must be provided a suitable habitat including a place to "get away" when children become too importunate.

Pros

- Values in positive interaction of children with animals
- Cognitive learning experiences in making connections between animals, plants, and products (e.g., bees-honey, cow-milk, tree-apples, etc.).

Cons

- Expense of maintenance and adult supervision may be high (though animal and garden areas in child support facilities are extremely inexpensive).

DO-IT-YOURSELF AMUSEMENT PARKS

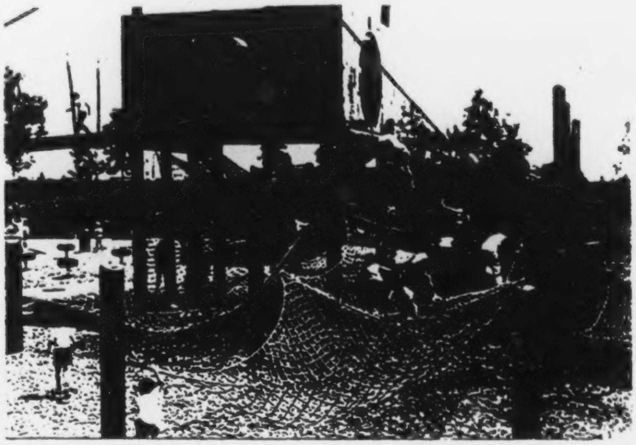
The best example of this type of play area is Children's Village in Toronto (Travel Report, 1978). Admission is charged and children use play equipment as they would amusement park rides, going from one to the other. The "rides" include very special play equipment such as water fight squirters, soft shape jungle-gyms, water slides, etc., equipment which might be too expensive to install and maintain without the admission charge.

Pros

- Very exciting for children. Can have play equipment which is too expensive to have elsewhere.

Cons

- Planned more for immediate attraction than long-term developmentally-relevant play.



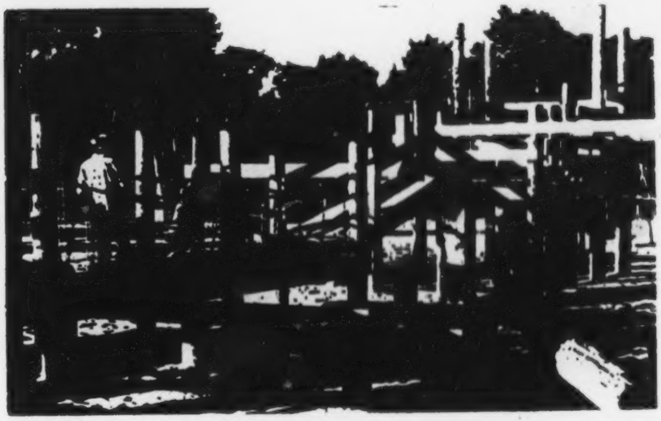
- Shy children may be uncomfortable in the noise and crowd.
- Admission charge may deter some children.

OPEN MULTIPURPOSE SPORTS PLAYING FIELDS AND HARD-SURFACE AREAS

Ball fields, basketball courts, and other organized-sports facilities are a necessary part of play area planning, particularly for school-age children. Studies have shown that older children are particularly attracted to ball playing areas (Cooper, 1975). Since older children are frequently temporary caretakers for younger children, it would seem reasonable to maintain visual contact between sports fields and other play areas for younger children.

COMPREHENSIVE PLAYGROUNDS

A comprehensive playground is a centralized, spatially-interconnected set of play spaces. It is analogous to a Network of Play, which is a decentralized, linearly-linked series of play experiences.

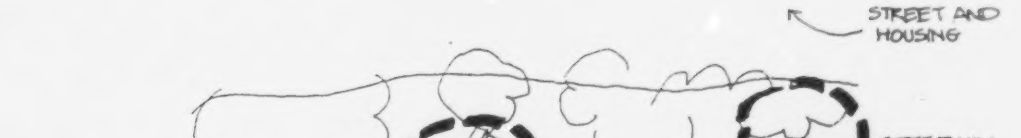


Arvid Bengtsson is a famous Swedish planner and landscape architect who has written extensively and engagingly about comprehensive playgrounds. He says:

> *The Comprehensive Playground or play park . . . should contain layouts for different age groups, i.e., not only for children and adults, but for the age groups in between for which we often fail to provide in traditional parks. In such a play park, tennis courts and courts for other ball games--they could be of the simplest kind--are just as essential as swings and sandpits; and*

> *resting places for the aged are no less important than layouts for active pursuits.*
> (Bengtsson, 1970, p. 110)

This type of play area includes a wide variety of activities for many age groups integrated into a single site. Examples are the Irvine Comprehensive Playground and the Mary B. Connelly Children's Playground (see Travel Report, 1978). Many comprehensive playgrounds exist in Europe and have been successful in attracting adults and children to play together (Bengtsson, 1970; Utzinger, 1970; Ledermann and Traschel, 1969). Comprehensive play may include traditional, sculptural, and creative play equipment, adventure play area, adult play (e.g., tennis, handball, etc.), swimming/ice skating, and ball fields and courts.


STREET AND HOUSING
STEEP HILL
LONG HILL SLIDES
ANIMAL PLAY AREA
CAROUSEL
OLDER CHILDREN AREA
ADULT GYMNASTICS EQUIPMENT
ROMANESQUE REVIVAL "MOTHER'S HUT"
TO BALL FIELDS PICNIC AREAS AND REST OF PARK
POND
PRESCHOOLER'S AREA
TODDLER'S AREA
MEADOW AND PICNIC AREA
FIELD SKETCH NO SCALE

MARY B. CONNELY COMPREHENSIVE PLAYGROUND
SAN FRANCISCO

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Pros

- Can be a powerful attractor to a specific location for both adults and children.
- Can make adult recreation more useable by providing play for the children who adults might otherwise hesitate to bring along.
- Can help parents and children enjoy recreation time together rather than having to separate to pursue their own interests.

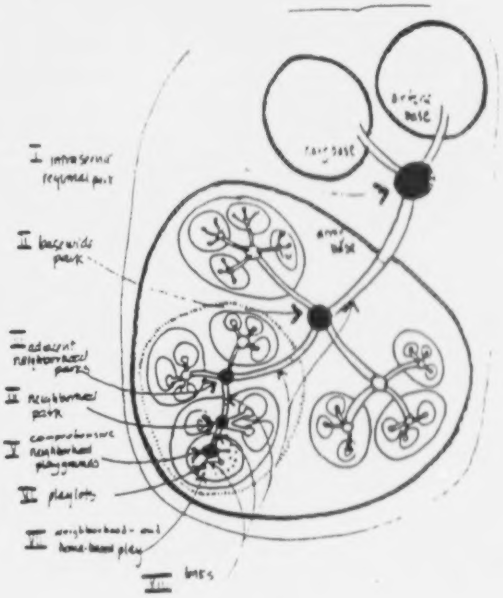
Cons

- Central location of all these facilities may mean less accessibility to entire population that if they were scattered throughout the community. Small children may be able to come only when parents bring them.

TIERED PARK SYSTEM

A tiered park system is a coordinated collection of small to large play areas and parks connected by park links. The system is designed to facilitate the distribution of a variety of large and small, linear and concentrated, quiet and noisy, traditional and innovative recreation and play activities for children and adults. The parks range from those focused on natural features (resource-oriented, e.g., regional hiking trails) to those that are focused on specially-designed facilities (facility-oriented, e.g., comprehensive playgrounds).

general diagram of a tiered & linked park system....



regional park
basewide park
adjacent neighborhood parks
neighborhood park
comprehensive neighborhood playgrounds
playlots
neighborhood- and home-based play
links
base
base
base

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LOCATION OF PLAY AREAS

In planning play spaces for an entire base, there is a hierarchy of locations which must be considered:

- Housing Areas and Undesignated Play Spaces
- Designated Neighborhood Play Areas
- Child-Support Centers and Schools
- Centralized Community-Use Spaces
- Links and Networks

HOUSING AREAS AND UNDESIGNATED PLAY SPACES

Children actually play in spaces other than playgrounds during the majority of their play time (Hole, 1966; Department of the Environment, 1973; Cooper Marcus, 1975; Travel Report, 1978).

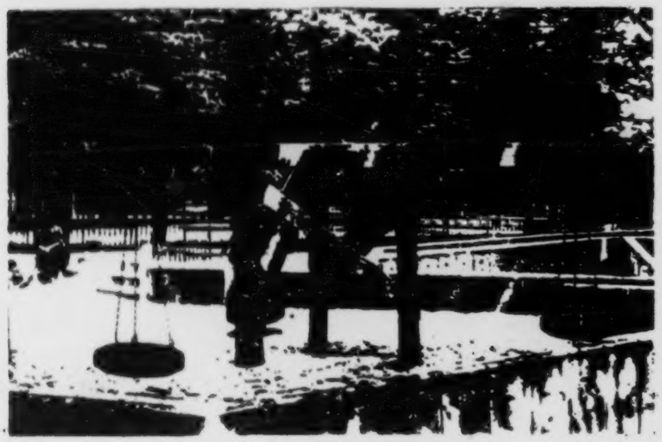
For younger children, the major play area is within a short distance of their own front door. This may include doorstep or balcony, yard, indoor entry space, on a fence, or wall, low garage roof, etc. (same studies).

For older children, undesignated play areas expand to include the whole neighborhood--vacant lots, streets and sidewalks, driveways, nearby school-yard, etc. These undesignated play areas will be used whether they are designed for play or not. Therefore planners and designers must be aware of this use and plan these spaces to be safe and satisfying for play.

> *Children will be attracted to safe, interior landscaped areas of Radburn-type layouts only if they find them more interesting play spaces than the surrounding roads or parking areas.* (Cooper Marcus, 1975, p.

DESIGNATED NEIGHBORHOOD PLAY AREAS

To complement the proper design of undesignated play areas, a variety of designated playgrounds can be planned for a community. These can include any or all of the above playground types as the needs of a community dectate (see Matrix in ORGANIZATION AND USE OF THIS DOCUMENT for ways to determine how to assess a community's needs and decide what types of designated playgrounds are required).

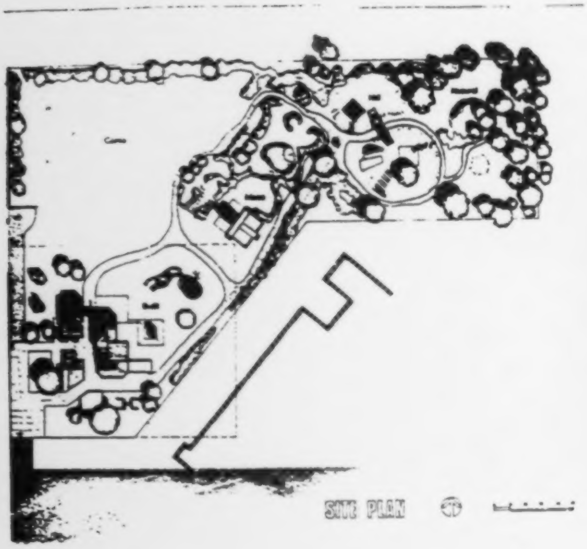


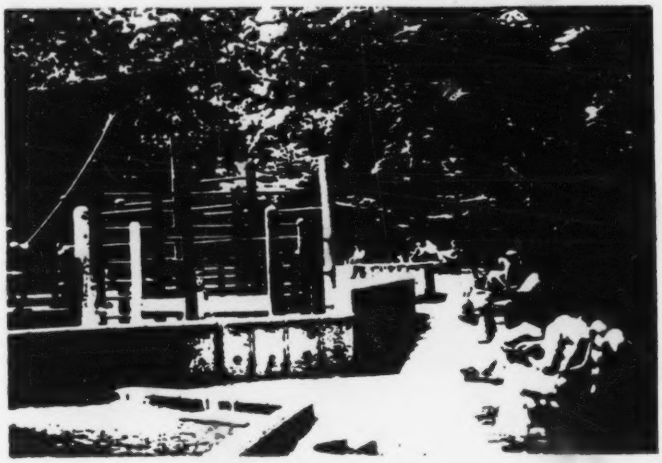
CHILD-SUPPORT CENTERS AND SCHOOLS

The outdoor areas for child-care facilities and for schools become an extension of indoor activity spaces. The emphasis is on the continuity between indoor and outdoor uses. Water play or sand play may occur in a continuum which includes both types of spaces. Plant study may happen in a sunny window greenhouse and an outdoor garden.

Outdoor activity spaces should include some sheltered "porch-like" space adjacent to indoor space so that outdoor areas can be used year-round.

In elementary and secondary schools, an important element of the outdoor spaces will be sports fields, hard-surface courts, and other sports facilities. It is reasonable to assume that these would be located adjacent to indoor sports (gymnasia) spaces.





CENTRALIZED COMMUNITY-USE SPACES

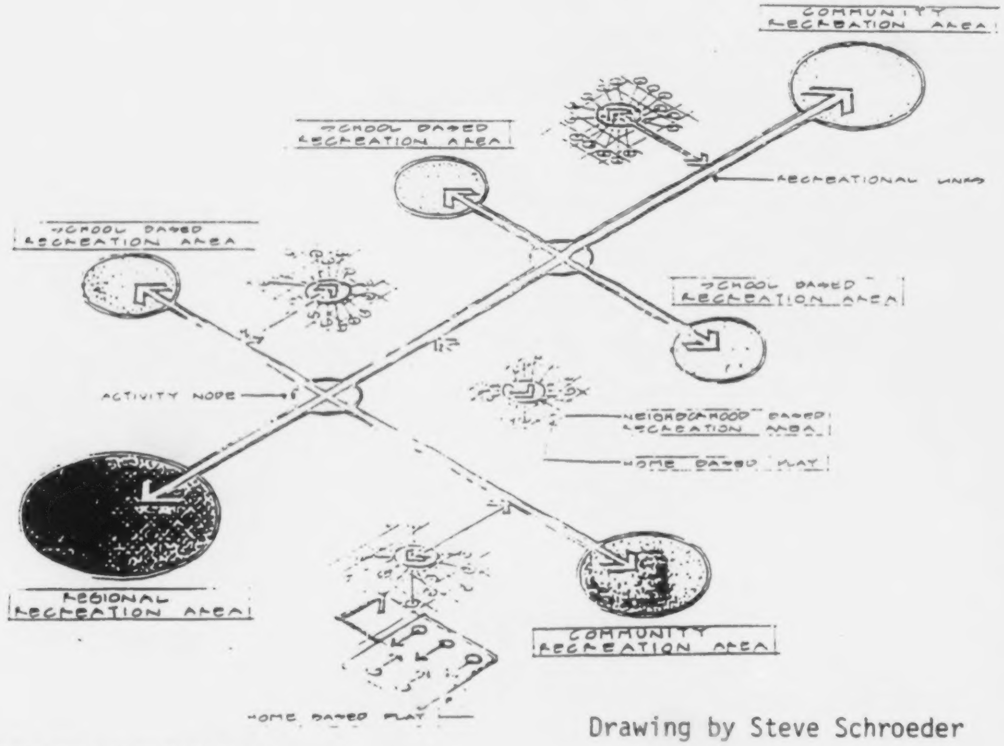
In each community, there will be places where people--adults and children--naturally gather. Such places may include shopping areas (e.g., "downtown"), community service places such as the town hall and library, centralized parks and recreation centers, and any other attractive places intended for use by the whole community.

Anywhere people gather there should be places for play. Parents will be much more comfortable taking children with them if they know special activities for children will be available where they want to go. Centralized community-use spaces would be appropriate locations for child-play areas which are unique, such as children's museum, children's farm or zoo, and do-it-yourself amusement park. Adventure play areas, though needing to be more numerous than those just mentioned, may also be located in conjunction with heavy-use areas. Because of staffing, an adventure play or creative play area in conjunction with a children's library might allow staff double-functioning (Hill, 1978).

LINKS AND NETWORKS

In the past, playgrounds have been relegated to "left-over" land--places which were not desirable for other uses. They have provided amenities for those children who happened to use them, but many have remained mostly vacant, lacking any special attraction that made it worth the effort by children to go to them. These play areas, located by chance, may in fact solve some problems in one specific neighborhood, but lack any real connection with other play opportunities for children whose needs extend beyond those available in the single location. Further, isolated playgrounds do not meet the needs of different age groups, young children, older children, and adults who need recreation opportunities together.

Comprehensive playgrounds, located centrally, solve many problems by providing numerous play possibilities by all age groups. But the central location will limit use by many children. Young children, older children without bicycles, and children whose parents can't bring them when they want to come will all find distance a difficulty.


COMMUNITY RECREATION AREA
SCHOOL BASED RECREATION AREA
RECREATIONAL LINKS
SCHOOL BASED RECREATION AREA
SCHOOL BASED RECREATION AREA
ACTIVITY NODE
NEIGHBORHOOD BASED RECREATION AREA
HOME BASED PLAY
REGIONAL RECREATION AREA
COMMUNITY RECREATION AREA
HOME BASED PLAY

Drawing by Steve Schroeder

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A more rational approach to providing a wide range of play opportunities with reasonable accessibility for children is to plan a hierarchical network of play. A network provides play for youngest children closest to home, and as the children's age and home range increase, provide play at a higher developmental level at varying distances from home. A very young child may only choose from home one local playground and central playgrounds where their parents may take them. Older children may choose from two to three local play areas, the child-care facility outdoor play and central play areas. A school-age child may choose from local play areas, a school playground, an environmental yard, or adventure playground within bike range.

The play locations, the links between them (including bike and pedestrian trails), and their connections to other community activities, are considered as a total play network. This assures each parent and child that integrated and developmentally-appropriate play opportunities will be available as needed.

OCCURRENCE OF TYPES OF PLAY IN KINDS OF PLAYGROUNDS

KINDS OF PLAYGROUNDS	TYPES OF PLAY cognitive	social	physical large	fine	quiet	programmed
homebase ①	•	●	•	•	●	·
traditional ②	·	•	●	·		
contemporary ②	•	•	●	·	•	•
natural ③	●	•	•	·	●	•
small hands-on museum ③	●			•	·	●
adventure ③	●	●	●	●	●	
network-comprehensive ④	●	●	●	●	●	●
link ④	•	·	●		•	

CODE

· occasionally
• some
● frequently

① Both traditional and contemporary playgrounds emphasize one type of play: large muscle play.
② "Theme" playgrounds emphasize a wide variety of types of play.
③ Comprehensive playgrounds or play networks include all the types of play that emphasize broader developmental goals.
④ Home-base play or play in the immediate neighborhood can include a variety of types of play and can support a variety of developmental goals.

EMERGING TRENDS

There are several themes which appear with increasing frequency in the current literature on child play areas. Administrators and designers should be aware of these trends as they cooperate to produce good, user-oriented play areas.

THE DEVELOPMENTAL RELEVANCE OF PLAY

The recent emphasis by child psychologists on the importance of play in children's development has begun to affect designers of child play areas. Play is integral to development and not a superfluous burning off of excess energy (Millar, 1968). Children's play is critical to psychomotor, intellectual, and social development. Paraphrasing the famous Swiss child psychologist, Professor Valia Tanon (1978) we may say that play is socially very significant.

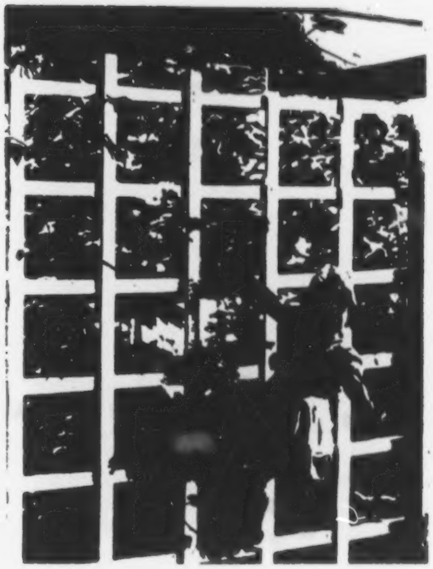
Relative to the triple goals of social, cognitive, and physical play, traditional and sculptural playgrounds have been evaluated and been found wanting (Hayward, Rothenberg and Beasley, 1974). Emergent ideas have arisen for the integration of play opportunities for these three types of play.

Designers are beginning to stress cognitive and social developmental play opportunities along with traditional physical play. This means that such things as adventure play, creative play, and environmental play areas are receiving more emphasis. Two other ways of doing this are proposed below--treating the entire neighborhood as a setting for play, and creating special networks and comprehensive areas for developmentally-integrated play.

RECOGNITION THAT CHILDREN PLAY "EVERYWHERE"

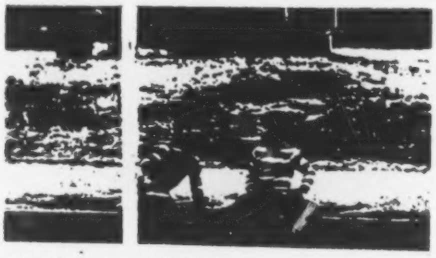
Planning for children's play everywhere in a child's environment is becoming a recognizably desirable goal. Leading researchers and students of children's outdoor free-time behavior are well aware that informal, home-based and neighborhood settings are the primary source of discovery and learning--not traditional playgrounds (e.g., Jacobs and Jacobs, 1978; Bengtsson, 1978).

A new awareness of home-based play and neighborhood play in undesignated play areas is becoming an important design factor. Research showing that children spend a majority of playtime outside of designated "playgrounds" has stimulated a search for design solutions to play in other places (Department of the Environment, 1973, Cooper Marcus, 1975, Moore, Burger, and Katz, 1979).



At all bases visited as part of this team's research (see Travel Report, 1978), children were observed to play more in the streets, on front porches, around front yards, corners, cul-de-sac drives and natural areas than they were in any designated traditional type of play spaces, whether they were located behind housing, in the "green belt," or on school playgrounds. This is the same pattern as found in other research.

Strategies to deal with this growing awareness include designing play in at the beginning of a residential development's construction, rather than shoving play into "left-over" spaces; conserving space for future play area development as communities grow; planning to integrate play with other community life activities; and--in general--designing all areas of a child's environment to accommodate play.



NEW MODELS SUPPLANT TRADITIONAL PLAYGROUNDS

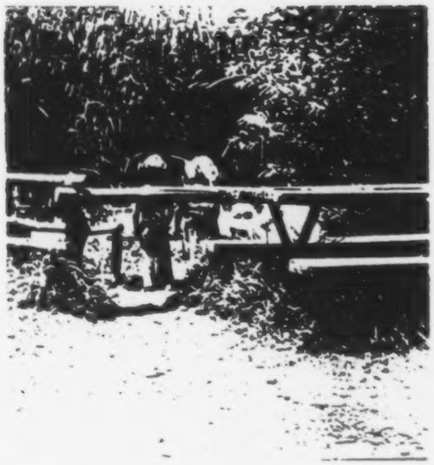
The value of traditional playgrounds is questionable on several grounds. These include a lack of play other than physical; dangerous moving equipment like swings, teeter-totters, and merry-go-rounds; the even more dangerous prediliction for concrete and asphalt surfaces; lack of paced alternatives for children at different developmental levels; few if any loose parts allowing children to manipulate their environment, etc.

New models which do in fact provide play possibilities which traditional playgrounds do not include adventure play and creative play programs, and environmental yards. These alternate types of play areas are becoming increasingly popular as designers research and analyze child development principles and user needs.

COMPREHENSIVE PLAY PARKS AND NETWORKS OF PLAY

Realizing that the need for play cannot be completely satisfied by any one specific playground, planners, designers, and administrators are beginning to see that a large variety of play possibilities for all age groups must be provided.

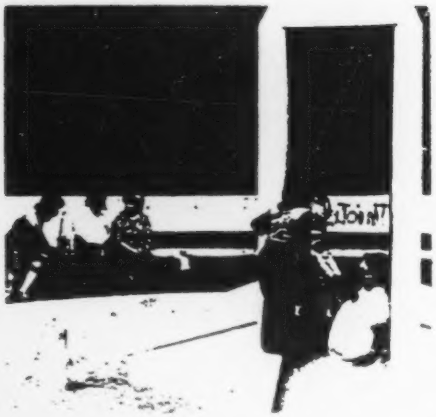
This may be done in a comprehensive play park, where many play area types are gathered into one central site. Or it may be done by a connected network of play which reaches through the entire community and integrates with other community activities. These trends are reified below in the forms of particular design recommendations and criteria.



MULTI-AGE GROUP PLAY AT THE NEIGHBORHOOD LEVEL

While zoning of developmental levels is appropriate, and zoning for safety is necessary, artificial separation of age groups is seen as undesirable.

This is especially crucial in child-care centers where the theory is that the center should combine the best of the home situation with developmental challenges and materials only able to be provided in a centralized, professionally-staffed facility. The implication is that children should not be isolated into strict age groups, but should have the freedom to observe younger and older, and to play in mixed-age groups.



Provisions for adults and children, older children and younger children, to play together are beginning to be made in several recently-designed comprehensive playgrounds (see Irvine Comprehensive Playground and the Mary B. Connolly Children's Playground in the Travel Report, 1978).

Further, play which takes into account the needs of all age groups is being considered at the neighborhood level. Some play opportunities for all age groups can be provided locally whether adults and children play together or separately (with visual connections).

INTEGRATION WITH COMMUNITY LIFE ACTIVITIES

As play is a part of life, its importance in community life is beginning to be emphasized by integrating play with other heavy-use community facilities. Shopping centers, libraries, town halls, schools, etc., all can be linked with play facilities. Anywhere adults go, children need to go as well. Providing them with special play places will help both child and parent to feel comfortable and at ease with each other in these otherwise potentially trying situations.

Further, watching others is a prime play activity (Cooper, 1975). What better place to watch than in a heavily-used shopping area. Places which are designed to play in and watch from at the same time fulfill both needs.

MAINSTREAMING

Making it possible for handicapped people to integrate themselves into normal life (including play) is now mandatory. If play and peer group interaction are vital for normal children, they are just as, if not more, important for non-able-bodied children and for learning disabled and mentally retarded children. There are positive values for both kinds of children in playing together (see U.S. Department of Housing and Urban Development, 1978; and Moore, Cohen, Oertel, and van Ryzin, 1979).

CONCERN FOR SAFETY

Playgrounds in the past were based on certain assumptions about safety, which, as date has been collected, have proven to be false. Traditional equipment is, in fact, very dangerous as are hard surfaces so common on America's playgrounds (Settles, 1974; Sweeney, 1978; Wilkinson, 1978).

Designers are beginning to make some design decisions specifically to increase safe use of play areas. Building slides into berms rather than leaving them free-standing is one example. Zoning very active play to prevent collisions, etc., is another.

ROLE OF PLAYLEADERS

As psychologists, designers, and administrators are realizing the vital role of play in a child's development, they are also beginning to re-examine the advantages of a trained adult playleader. Play leaders can be just as, if not more, important than teachers to a child.

Some of the most developmentally relevant types of play areas require a playleader (e.g., adventure play, children's musuems, environmental yards, etc.). Research has shown that children come more often and stay longer at play areas with playleaders than at those without.

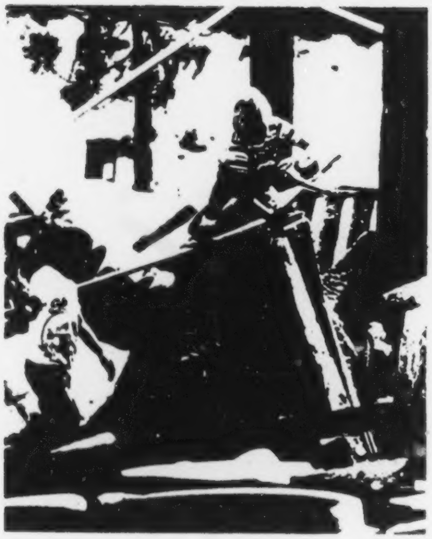
Canada and Great Britain are far ahead of the U.S. in re-introducing playleaders onto playgrounds. In Britain, for example, there are now special training courses at technical colleges and teacher-training schools, and several textbooks on playleadership have been written. In Canada, a National Task Force on Children's Play set this as one of its top priorities, and has recently developed a Play Leadership Training Kit for trainers of a new breed of playleaders (see Canadian Council on Children and Youth, n.d.). In the United States, there are the beginnings of a new move to train playleaders, and this trend is expected to continue.

Planning for play areas with playleaders has become a very important administrative and design decision.

COMMUNITY PARTICIPATION IN THE PLANNING AND CONSTRUCTION PROCESS

Presenting a community with play areas which have been pre-designed by an outsider without community input is less than desirable. Parent and child participation in design will help ensure the appeal and usability of the play area. The play equipment and other play items which adults find appealing are very often lifeless and unenticing to children (Stone, 1970).

Further, participation by adult and child community volunteers in the construction of the play area will enhance the image of the play area as "their own." Involvement will increase use, increase community interest in maintaining the play area, and help enhance resident pride in their own neighborhood (Hogan, 1974; Ellison, 1974; Hewes, 1974; Friedberg, 1975).



The most articulate statement of the trend for involvement of children in the planning and construction process came in a speech by Paul Davidoff at the 1978 International Playground Conference in Canada. He said:

> *I would like to propose that in this, the International Year of the Child, this conference go on record as supporting the undertaking of actions to increasingly involve children in the planning and administration of programs of play. . . . It is disrespectful of the child to exclude him or her from determining his or her own interests. . . . Planning with the child in mind, with the child present, with the child planning, means empowering the child to act responsibly in accord with his or her own evaluation of goals, means, and available resources. . . . I believe that realization of democratic objectives depends greatly on education of children in the practice of democracy.* (Davidoff, 1978)

THE TYRANNY OF PLANNING FOR PLAY

An articulate argument has been raised recently by Eva Auslander, a famous Scandinavian parks and recreation expert. She argues two things: on the one hand, she calls for planning the total environment for children, not just play spaces, or even more limited, not just traditional playgrounds and playing fields. Following from the Ekistics planners in Greece, she asks, "Imagine how a city would look if it were designed without children in mind? Would it be any different? Not much" (Auslander, 1978).

But as an antidote to overplanning, over-designing, and generally to making the environment just so, without any possibilities for easy change and for users to shape it, she argues on the other hand that most currently designed children's spaces are over-designed, they are too thought out, nothing is left for the children to explore, to make, to shape, to make emotional ties with.

Young children are more open to sensations than ever again in life. Accessibility is therefore the key--if children can get around the city--or a base--or a suburb--and if there are things for them to do on their own terms when they get there, then we are on our way to making a good environment for children.

She says, furthermore, that play per se is silly-children don't want to "play" as if this is some unimportant leisure time pursuit; they want to be involved in life experiences, with adults and other children. We give children toys--or playgrounds--rather than spend time with them and allow them to come into community pursuits and to freely use the total neighborhood.

Professor Madeiros from Brazil echoes the same theme in saying, "The only time a toy is educational is when the child leaves it, and the father trips over it" (Madeiros, 1978). You can't buy off your kids by buying them toys.

EMERGING INTERNATIONAL AND NATIONAL POLICIES ON CHILDREN'S PLAY AND CHILDREN'S PLAY AREAS

There are two major international organizations which look out for the rights of children including their rights to play and play areas--UNESCO/UNICEF and the International Playground Association (IPA).

UNESCO and the IYC Policies

UNESCO is the educational, scientific, and cultural arm of the United Nations. UNICEF is its fund-raising and consciousness-raising aspect. In November of 1959, the General Assembly of the United Nations adopted a new Declaration of the Rights of the Child which would tie in with the Universal Declaration of Human Rights. Principle 7 of the 1959 Declaration states:

> *The child shall have full opportunity for play and recreation, which should be directed to the same purposes as education; society and the public authorities shall endeavor to promote the enjoyment of this right.*

To further the application of this Declaration of Children's Rights, the UN General Assembly proclaimed 1979 the International Year of the Child (IYC). Thus the UN asked the world to

> *think children, to celebrate their true potential, to take a hard look at each nation's programs for children, and then mobilize every possible supportive action in both the developing and the developed countries alike, at the local, national, and international levels, to promote all children's possibilities.*

As stated in a UN publication, the IYC should be far more than a one-time, twelve-month effort. It should and can become America's open-ended framework for strong, far-reaching actions directed toward permanently improving the status of all children. As opportunities for play and recreation--"which should be directed toward the same purpose as education"--are an important part of the Declaration of Children's Rights, they are an important part also of the International Year of the Child.

IPA Policies

The International Playground Association (IPA) is the world's leading organization concerned with children's leisure and with play and play facilities. An international body with members in countries around the world, and with official representatives in 22 countries, it is chartered as a Category B organization in UNESCO and thus has an informational and consultative role in UNESCO. It holds triennial international meetings, the last ones in Milan (1975) and Ottawa (1978--during which one member of this project team was invited to speak).

At each of the triennial meetings, resolutions and recommendations have been passed aimed at promoting and improving the development of play opportunities and play environments world-wide. These policy recommendations are then advocated at the national and local levels by official representatives and members.

Among these internationally-adopted resolutions are the following--the earlier of which have become standard practice in many parts of the world, and the more recent of which promising also to become standard operating procedure:

Ensuring the child's right to play

- *All aspects of the development of children and youth and leisure time must be brought to the knowledge of governments and local authorities.* (Paris, 1969)

- *All aspects of play and the development of children must be included in the education of architects, planners, landscape architects, educators, recreation managers, playleaders, hospital workers: all persons planning for, or caring for, children in any aspect of their work.* (Paris, 1969; Milan, 1975)

● *Each country should endeavor to establish a centre where expert information can be made available to all concerned with play and where research can be undertaken.* (London-Liverpool, 1967)

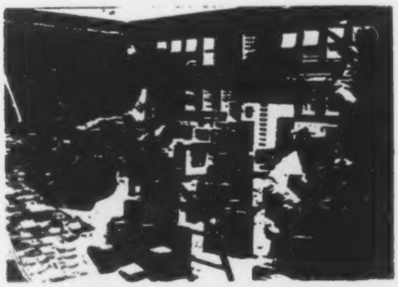
● *Governments and local authorities should take provision for the out-of-school life of children as seriously as provision of formal education, building of roads and parking places, and disposal of sewage.* (Vienna, 1972)

o *In order to obtain sufficient play and recreation facilities near as many homes as possible, legal regulations should be aspired to in every country.* (Zurich, 1964 -- Enabling legislation existed in Denmark, Germany and Sweden as of 1964)

o *No new housing schemes should receive either government or municipal financial subsidies nor municipal planning consent unless adequate space has been reserved for play.* (Zurich, 1964; London-Liverpool, 1967; Vienna, 1972)

o *When reorganizing old neighborhoods, legislation should be directed to the recycling of space, to allow sufficient new open space for play and recreation use near to homes.* (Zurich, 1964)

o *Due to growing recreational problems of all age groups, government and local authorities should give extensive financial assistance for planning, capital cost, and programmes.* (Zurich, 1964)



Recommendations re play programs and re design of playgrounds

- *In order to encourage better design, national and international guidelines for space arrangement should be formulated suggesting size and layouts. Functional drawings of successful solutions should be collected and made available.* (Zurich, 1964)

- *Governments must take care of the education of playleaders. The national education shall be completed with international contacts, exchange, and study tours.* (Paris, 1969)

- *As the training of personnel for play in all its forms is a matter of urgency, governments should make provision for the training of those able to work with people in creative ways on adventure playgrounds and in similar play environments. It is recommended that this training should be democratic, socially relevant, practically based, and with no academic bar to entry. The recogtition of and appropriate salary for playworkers must be commensurate with the importance of their work for society.* (Milan, 1975)

- *Every large estate or development, district, or village, should contain:*
    - *a public park with lawn, walks, seats for children*
    - *play, sport, and romping fields for all kinds of ball games for young and old*
    - *an all-weather surfaced area and open-air theater*
    - *building and workplace, adventure or Robinson type playground*
    - *playcorners for young children*
    - *recreation centre with play and club rooms, library, and workshops*

(Zurich, 1964)

- *In addition to physical recreation, young people need opportunities for free constructive play and for raw natural materials that they can use to suit their own desires.* (London-Liverpool, 1967)

- *Governments and local authorities should provide for the development of adventure playgrounds which must be related to all other play spaces and other types of playgrounds, open spaces, and areas in public parks.* (Vienna, 1972)

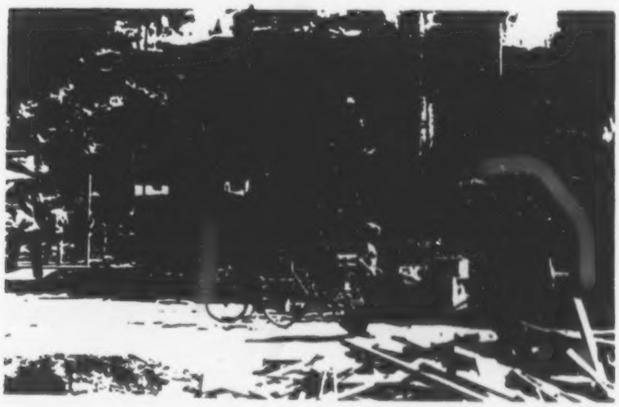
- *It is imperative that governments should conserve natural areas for play.* (Milan, 1975)

- *The total urban area must be viewed as a potential play environment for children and be developed accordingly.* (Milan, 1975)

- *We must recognize the total environment in considering children's play, not just parks and playgrounds.* (Ottawa, 1978)

- *We must ensure children's safe access, without constant adult supervision, to a diverse and expanding environment close to home.* (Ottawa, 1978)

- *The diversity accessible to children should include all aspects of daily life of the adult community and its natural and built surroundings.* (Ottawa, 1978)



Planning with community participation

- *Each planning team for housing and redevelopment areas should include a person knowledgeable about the needs of children.* (Milan, 1975)

- *Indoor and outdoor play environments should be managed and developed according to individual community needs. There ought to be a maximum consultation and participation with the community concerned, and this includes the children.*

- *The process of planning, design, and management of the environment should be one of participation by the total community, including its children. Professionals should work at this level to encourage community self-reliance.* (Ottawa, 1978)

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PLANNING CRITERIA AND RECOMMENDATIONS

PROGRAM MASTER PLANNING

100

This section includes basic policy decisions to be made with regard to planning for children's play. Such issues as the economics of planning, whether or not to have play leaders at playgrounds, whether or not there is need for a base-wide child advocate to look out for and coordinate programs for all of children's outdoor recreation needs, and strategies for implementing new plans are all dealt with in this section.

101 A Program and Master Plan
102 An Advocate for Play
103 A Variety of Play Experiences
104 Strategies for Funding and Establishing Play Areas
105 Multi-Factor Economic Analysis
106 Playleaders

101 A PROGRAM AND MASTER PLAN FOR PLAY ON EACH BASE

ISSUE

THE AVAILABILITY OF PLAY AND RECREATION AREAS IS A NECESSARY AND SIGNIFICANT COMPONENT OF ARMY MORALE AND REENLISTMENT PROGRAMS. THEREFORE, THE IMPORTANCE OF PLAY AND PLANNING FOR PLAY ON MILITARY BASES MUST BE CONSIDERED IN A MASTER PLAN.

JUSTIFICATION

An all-volunteer army has increased the number of army families with children and therefore the demand for family housing and family services. The military community includes now over 1,000,000 children from infancy to adolescence who live with their families on military installations.

Because of the time and effort it takes to train military people, reenlistment is a major issue. Family morale is one issue which a family considers in a reenlistment decision. The availability of play and recreation opportunities is one factor which contributes to a positive image of "life in the army."

The relative importance of play in housing areas is argued by Cooper Marcus in her study of Easter Hill Village. She concludes that

> *[Since] by far the greatest number of users of public open spaces in multifamily housing are children . . . more effort should go into designing the site for children's rather than adults' use.* (Cooper Marcus, 1975, p.

PRINCIPLE

A PROGRAM AND PHYSICAL MASTER PLAN FOR PLAY ON EACH BASE

DEVELOP A PROGRAM AND PHYSICAL MASTER PLAN FOR PLAY ON EACH MILITARY BASE, AND INCLUDE A VARIETY OF PARTICIPANTS IN THE PLANNING PROCESS.

RECOMMENDATIONS

Systematic planning for play is important. While projects could be done on an ad hoc basis, planning for play provides the following benefits:

1. ability to consider and compare merits of specific programs against the general needs of the base
2. ability to coordinate incremental achievements so that they reinforce and contribute to an overall plan
3. provision for an authoritative source of planning information for design and construction firms making turnkey proposals for new family housing
4. establishment of a frame of reference for evaluation, negotiation, and decision making
5. communication of the intention to implement grass-roots and self-help proposals

102 AN ADVOCATE FOR PLAY

ISSUE

ALTHOUGH PLAY IS IMPORTANT TO ARMY BASES, THE INSTITUTIONAL STRUCTURE AND THE SEPARATION OF PLANNING AND FUNDING ACTIVITIES MAKE IT DIFFICULT FOR NEW PLAYGROUNDS TO "HAPPEN."

JUSTIFICATION

The planning and implementation of play areas was not always a part of an overall planning program. In addition, some of the most important play areas in any proposed network are tiny and could easily be done as self-help projects. A bureaucratic system is not designed to support and coordinate such small-scale, incremental efforts. However, a single person within that system could.

Implementation problems due to lack of clear, designated leadership also occur in civilian park districts.

> *Lack of communication among city, county, and private agencies is a major problem preventing the optimum utilization of existing recreational facilities and programs. As a consequence, coordination is inadequate between city and county recreation departments and between such departments and the various semi-public organizations carrying on recreation activities. In addition, communication between recreation departments and the citizen is frequently inadequate. In the past, recreation officials have felt it sufficient merely to provide recreation opportunities. Today, citizens not only must be informed of the availability of the various programs, but also convinced that participation and utilization are worthwhile. However, communication alone is not enough. Recreation officials and recreation leaders must have the ability to relate departmental activities and programs to the needs of the community.* (Gold, 19 , p.

As suggested in the Travel Report (1978), play is a "lost soul" and without a single advocate, not much will happen.

PRINCIPLE

AN ADVOCATE FOR PLAY

PROVIDE FOR THE POSITION OF AN ADVOCATE FOR PLAY WHOSE SINGLE TASK WOULD BE DEVELOPING AND COORDINATING PLANNING AND PARTICIPATION IN PROVIDING PLAY OPPORTUNITIES.

RECOMMENDATIONS

- Write a job description for a single, designated advocate for play and recreation at each military base. This advocate could be based either in the master planning office, or more likely, in Community Services.
- Responsibilities of an advocate/coordinator would be the following:
  - advocate and encourage "planning for play" with various agencies
  - act as ombudsman for parks and play areas after construction to assure quality maintenance, maintain safety, and to stimulate and review change proposals
  - organize and stimulate community participation in the master-planning, program development, and implementation of play and playground proposals
  - coordinate masterplanning and predesign planning on housing, school, child-care, and recreation planning projects
  - coordinate funding
  - assure final implementation

103 A VARIETY OF PLAY EXPERIENCES

ISSUE

SATISFYING CHILDREN'S PLAY NEEDS WILL, IN FACT, PROMOTE THE SATISFACTION OF THE ENTIRE COMMUNITY BY HELPING TO ENSURE HEALTHY DEVELOPMENT OF CHILDREN AND BY REDUCING UNPRODUCTIVE BEHAVIOR COMMON AMONG FRUSTRATED CHILDREN.

JUSTIFICATION

Children have basic play needs which are directly related to healthy social, physical, and intellectual development (see THE NATURE OF PLAY). These play needs vary from child to child and vary within one child from day to day and stage to stage. One particular type of play area cannot meet all children's needs or even some children's needs all the time.

Since children will try to satisfy these needs whether possibilities exist or not, play can actually become a disruptive element in the community, a source of contention between adults and children and a frustrating problem for both. An enriched environment with potentials for many types of play in areas of which adults approve, will reduce the frustration which children (and parents) feel, and thereby enhance development.

PATTERN

PROVIDE A RICH VARIETY OF PLAY EXPERIENCES WHICH INCLUDE OPPORTUNITIES FOR VARIOUS FORMS OF PHYSICAL, SOCIAL, AND COGNITIVE PLAY. INCLUDE DIFFERENT TYPES OF PLAYGROUNDS (E.G., ADVENTURE PLAY, DESIGNATED PLAY STRUCTURES, ETC.).

RECOMMENDATIONS

- See Types of Play in THE NATURE OF PLAY for the types of play to be provided for.
- See patterns in Section 700 for different, particular types of play areas to be provided in a comprehensive play scheme.

ISSUE

FUNDING PLAY AREAS AND IMPLEMENTING PLANNING DECISIONS IS DIFFICULT BECAUSE OF THE DISPARATE AND OFTEN SCARCE FUNDING SOURCES FOR PLAY AND RECREATION AREAS ON ARMY BASES. IN ADDITION, LAND ALLOCATION FOR PLAY AREAS IS OF LOW PRIORITY; INITIAL CONSTRUCTION AND FURTHER MAINTENANCE OF PLAY AREAS ARE TYPICALLY UNDERFUNDED OR NOT FUNDED AT ALL.

JUSTIFICATION

If the role of play in the quality of life is recognized, then an appropriate response would be to organize funding allocation and planning procedures which support implementation of play areas and facilities.

According to Ledermann and Trachsel (1968), space for play should be set aside immediately during early planning stages and not be allowed to be pushed into left-over areas.

In support of such considerations, Lady Allen (1968) says:

> *Many happily conceived plans have failed to materialize because there is rarely any obligation to allocate funds for their development at the start of the project. There should be a firm policy of relating the cost of environmental development to housing costs and thereby ensuring that money so allocated cannot be whittled away.* (p. 139)

Cooper Marcus emphasizes the importance of the issue in the following statement:

> *Designers must make it clear to the client, the builder, loaning authorities, and management that landscaping, play equipment, fences, benches, etc., are not "extras" that can be eliminated at the construction phase without altering the whole social and aesthetic effectiveness of the design. Where some or all of these features have been eliminated--usually by the builder in order to cut costs--the social consequences in terms of an unattractive environment, lack of play areas, reduced privacy, lack of gathering places, etc., have been considerable.* (1975, p.

Adventure and natural play areas have special funding problems because they require staffing. The general experience with funding of natural play areas suggests that such areas benefit from volunteer help in developing, building, and maintaining them (Travel Report, 1978) whether or not they are associated with schools. The donations that have supported the Central Park Playgrounds and many others do not appear to be a viable resource for military bases, although joint sponsorship with a school district is a possibility, especially for natural play areas. Adventure play areas require staffing for playleadership and a continuing program of support.

Playgrounds can also have ongoing financial problems. According to Clare Cooper Marcus' analysis of Easter Hill Village, successful play areas in family-housing areas require a well-conceived support system such as a home-owner association which has a clear and published policy on play. While some of her recommendations are not directly applicable to military settings, there is a parallel need for organization.

In Cooper Marcus' study of 349 home-owner associations, six characteristics were found to be common to successful associations, and are presented here as guidelines:

1. *The home-owners association must be set up before the dwellings are sold.*

2. *Membership must be mandatory for each buyer and each successive buyer.*

3. *The open space restrictions must be permanent, not just good for a given period of years.*

4. *The association must be responsible for liability insurance, local taxes, and the maintenance of recreational and other facilities.*

5. *Residents must pay their pro rata share of the cost; the assessment levied by the association can become a lien on the property.*

6. *The association must be able to adjust the assessment to meet changed needs.* (1975, p.

Another major study of the problem suggests the following:

> *Optimal utilization of potential recreation resources is not being achieved in most of the nation's cities. The substantial acreage adjacent to, underneath, and above expressways and highway interchanges has been virtually undeveloped for recreation purposes. Publicly owned facilities with existing recreation capabilities are being underused. School facilities in particular, even in jurisdictions having city-school recreation agreements, are not being utilized effectively. To meet the rising demand for recreation, in spite of the declining availability of open space, cities must expand the multiple use of facilities, establish park-school complexes, and employ imaginative designs and new construction techniques.* (Gold, 1968, p.

It can be seen that new family-housing areas represent an important place for increasing the quality of play on military bases.

There appear to be five possible ways of getting play funded on Army bases:

- as part of a "turnkey" program
- as a special program of the Community Services office: self-help program
- use of non-appropriated funds and maintenance funds assigned to the family-housing office, community services office, or base maintenance
- gifts of time, materials, and equipment: sometimes as a service project of a reserve or military unit
- use of non-appropriated funds and maintenance funds of a particular unit, e.g., a school or nursery

Judging from the state of children's outdoor recreational environments on bases visited, none of these methods are very successful. However, the "turnkey" incentive program and the self-help projects may have the most potential (Travel Report, 1978).

PRINCIPLE

STRATEGIES FOR FUNDING AND ESTABLISHING PLAY AREAS

ALL AVAILABLE STRATEGIES TO ACQUIRE LAND, SECURE FUNDING, AND ENSURE CONTINUING SUPPORT SHOULD BE REVIEWED AND APPROPRIATELY USED ON EACH BASE.

RECOMMENDATIONS

- Each base should identify the various funding alternatives available to it (including donations and volunteer work).
- Regulations should be written to require area planning to restrict categorical reduction of equipment and facilities in "turnkey" proposals for family-housing areas.
- If playgrounds are to be evaluated as a criteria of proposal-selection in turnkey projects, regulations should be written so that they cannot be categorically eliminated to save costs later on.
- Housing proposals should provide for play at the ratios spelled out in THE TIERED PARK SYSTEM.
- Residents in existing family-housing areas should provide information on preferences when planning new family-housing areas.
- Costs associated with staffing child play should be assigned to a specific jurisdiction at each military unit.
- Playleadership should be identified as a specific job category within the Family Services Division.

RELATED ITEMS

THE TIERED PARK SYSTEM

105 MULTI-FACTOR ECONOMIC ANALYSIS

ISSUE*

ECONOMIC ANALYSIS IS OFTEN INAPPROPRIATELY LIMITED TO INITIAL CAPITAL COST. OTHER FACTORS DESERVE CONSIDERATION EVEN THOUGH THEY MAY BE MORE DIFFICULT TO ESTIMATE.

JUSTIFICATION

Dattner (1969) suggests that the cost of play spaces should be figured by use and maintenance, not by initial cost.

Stone (1970) in a publication of the National Association for the Education of Young Children, suggests that in figuring costs, the planner should weigh the actual use children make of the various alternatives; choosing the most use for money available is better than purchasing the least expensive alternative.

Lady Allen (1968) adds that:

> *Skimpy allocations of funds for landscape work at the outset will certainly involve greater expense in the future, for the total environment will remain drab and forlorn and consequently attract vandalism.* (p. 139)

Adventure playgrounds deserve special consideration as a cost-effective play area. For a modest capital investment and a modest continuing cost for playleaders, it delivers developmentally-relevant play experiences at a higher rate of usage than other types of play areas (Rothenburg, 19).

However, according to landscape architect Bill Rock,

> *Adventure playgrounds are difficult to develop as part of a park system because the preference of most park systems' administrators is to spend $20,000 on five pieces of equipment rather than on the salaries of 5-10 aides for the summer (a typical play-leader budget for 5-10 aides would be $20,000 for three summer months).* (Travel Report, 1978, p. 105)

Economics of land costs are not a determinant on military bases as they are in civilian settings. Still, on many bases land in prime locations is in scarce supply and during the planning of a new family-housing area it is easy to squeeze out open space to make the overall scheme more compact and less expensive.

The following charts summarize the following:

- areas in which you shouldn't try to save money
- a multi-factor analysis of various economic considerations for the different types of parks recommended
- typical planning costs for various activities according to the Southeastern Wisconsin Regional Planning Commission (1977)

AREAS IN WHICH YOU SHOULD NOT TRY TO SAVE MONEY

CAPITAL COST FACTORS	ISSUES TO CONTROL COSTS/MAXIMIZE BENEFITS
SITE PREPARATION	Select sites suitable for selected activities. Develop good, clear drainage patterns.
EQUIPMENT	Quality equipment lasts and requires less maintenance. A cost-benefit analysis shows that heavy use will put poor quality equipment "out of use" thus making it more expensive than more expensive, better quality equipment which continues to be used. (Dattner, 1970; Lady Allen, 1968)
UTILITIES	Distance and frequency of connections/outlets are the biggest cost factors.
LANDSCAPE MATERIALS	This becomes a major asset of any developed area and should not be eliminated to save money.

Some specific examples of typical costs (1975) are recorded in the two charts that follow:

UNIT COSTS FOR TRAIL FACILITY DEVELOPMENT WITHIN THE PROPOSED PUBLIC RECREATION CORRIDOR: 1975

TRAIL TYPE	UNIT COST	SPECIFIC COSTS INCLUDED
Wide trail (8 ft.) Accommodating biking and snowmobile activity	$31,000 per linear mile in heavy use area	Clearing, bituminous paving, and signing
Narrow trail (5 ft) Accommodating hiking, horseback riding, nature study, and ski touring activity	$7,000 per linear mile in heavy use area	Clearing, compacted gravel surface, and signing

Southeastern Wisconsin Regional Planning Commission, 1977, p. 394

UNIT COSTS FOR PROPOSED FACILITY DEVELOPMENT: 1975

Facility	Unit Costs	Specific Costs Included
Baseball Diamond	$ 14,000 per diamond (base cost) $ 30,000 optional lighting and fences per diamond	Base cost per diamond includes amounts for backstop, grading and field preparation, and related parking
Basketball Goal	$ 2,125 per goal	Cost per goal includes amounts for goal and backboard, site preparation and paving, and fencing
Playfield	$ 2,800 per playfield	Cost per playfield includes amounts for grading, seeding, fertilizer, and top soil
Playground	$ 4,700 per playground	Cost per playground includes amounts for play equipment and surface material
Softball Diamond	$ 10,000 per diamond (base cost) $ 25,500 optional lighting and fences per diamond	Base cost per diamond includes amounts for backstop, grading, and field preparation, and related parking
Swimming Pool	$672,500 per pool	Cost per pool includes amounts for bathhouse, pool equipment, concessions, site preparation, and related parking
Tennis Court	$ 10,600 per court (base cost) $ 3,500 optional lighting per court	Base cost per court includes amounts for grading and surfacing, fencing, nets and posts, and related parking
Additional Park Development Costs	$109,500 per Type III park	Cost per Type III park includes amounts for general park lighting, small shelter building and rest rooms, general landscaping and walkways, park furnishings (including picnic tables, benches, waste containers and signs), and a parking lot
	$ 28,340 per Type IV park (base cost) $ 25,000 optional small shelter and rest rooms	Base cost per Type IV park includes amounts for general park lighting, general landscaping, walkways, and park furnishings (including picnic tables, benches, waste containers, and signs)

Southeastern Wisconsin Regional Planning Commission, 1977, p. 431

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Adventure play areas pose a particular kind of planning problem because they don't fit the typical emphasis on equipment found in most park and recreation planning. As reported in the Travel Report:

> *Capital Investment/Operating Cost*
>
> *The capital investment cost of adventure playgrounds is actually quite low. They need a fence, high quality tools (cheap tools are more expensive in the long run because they don't last), loose and donated materials that need to be picked up, a pick-up truck--all basic for an adventure playground. The operating cost is the salaries of the playleaders and their staff.* (Travel Report, 1978, p.

In the Travel Report we outlined some typical recent costs for play areas. Those findings are repeated below:

> *A $30,000 neighborhood play area like the one in Bolling's family housing area has a lot of positive impact on both kids and their parents. The kids identify with it and use it and the parents enjoy the idea of having it as an amenity.*
>
> *Large impressive contemporary play areas capable of handling 100-200 children like those in Central Park can easily cost $200,000 to $300,000.*
>
> *Less expensive play areas can also have impact. But even a few pieces of the most traditional metal equipment or the newer timber equipment can cost $3,000-4,000 before installation.*
>
> *Both expensive and inexpensive play areas can fail if they don't fulfill the basic criteria of good playgrounds.*
>
> *Adventure playgrounds cost $20,000-30,000 an acre plus yearly play leadership costs of about $20,000.* (Travel Report, 1978, p. 182)

MULTIFACTOR ECONOMIC PLANNING

	TYPES OF PLAY AREAS / PER FACILITY						
ECONOMIC ISSUES	HOME BASED	IMMEDIATE NEIGHBORHOOD	NEIGHBORHOOD	LINK	NATURAL	ADVENTURE	"THEME"
CAPITAL INVESTMENT (RANGE) ①	0-1000	2000-10,000	30,000+	7000/MILE	30,000	20,000-30,000 PER ACRE	30,000-300,000
CONTINUITY (LIFE CYCLE COST)							
LANDSCAPE MAINTENANCE ②	YES	YES	YES	YES	① VARIES	MINOR	YES VARIES
EQUIPMENT AND FACILITY MAINTENANCE ③	VARIES	YES	YES	MINIMAL	MINIMAL	MINIMAL	YES
STAFFING ④	NO	NO	NO ⑤	NO ⑤	YES/NO	YES ④	YES/NO ⑤
EFFICIENCY (USE)							
FREQUENCY OF USE	GOOD	GOOD	GOOD	GOOD	VERY GOOD	GOOD-VERY GOOD	GOOD
IMPACT ON CHILDREN'S DEVELOPMENT	IMPORTANT	OK/GOOD	OK/GOOD	GOOD	VERY GOOD	VERY GOOD	OK/GOOD

NOTES

1. Self help, donated labor and materials, or grants can reduce this cost.
2. Any park system or open space system requires maintenance.
3. Equipment maintenance can be minimal or continuous depending both on the pieces selected and the local social climate.
4. Staffing: adventure playgrounds require staffing which will vary with the size and duration of the program.
5. Playleadership is a re-emerging trend in parks and recreation. $20,000 = salaries for 5 staff and a playleader for a summer for 100-500 children.

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PRINCIPLE

MULTI-FACTOR ECONOMIC ANALYSIS (COST BENEFIT)

DO A MULTI-FACTOR ECONOMIC ANALYSIS BASED ON USE, MAINTENANCE, INITIAL COST, LIFE-CYCLE COST, AND BENEFITS.

RECOMMENDATIONS

- Set aside desirable sites for play space at the beginning of planning for new family-housing areas.
- Choose play equipment and landscaping based on a multifactor cost analysis including the following: use, maintenance, and initial cost.
- Use life-cycle costing as a better and more accurate indicator of actual cost than an initial price tag.

106 PLAYLEADERS

ISSUE

WHEN PARENTS ARE UNABLE TO SUPERVISE THEIR CHILDREN OR "OVER-SEE" THEIR OUTDOOR PLAY, CHILDREN SHOULD STILL HAVE THE OPTION OF OUTDOOR PLAY OPEN TO THEM. CERTAIN PLAY TYPES AND PLAY AREAS REQUIRE ROLE MODELS AND ADULT MANAGEMENT OF EQUIPMENT AND MATERIALS. THEREFORE, SOME PLAYGROUNDS MUST BE STAFFED WITH ADULT PLAYLEADERS.

JUSTIFICATION

The Department of the Environment (1973) of England advocates staffed play areas, saying the following:

> *Half a child's intellectual growth will have been established by the fourth year. It is during these years that the child needs rich opportunities for play and for language development.* (p. 91)

Galambos Stone (1970) also urges:

> *We plead for the sensitive supervision of children because we have so often seen the boredom, destructiveness, danger and abuse that emerge in its absence.* (p. 47)

this is our Playleader

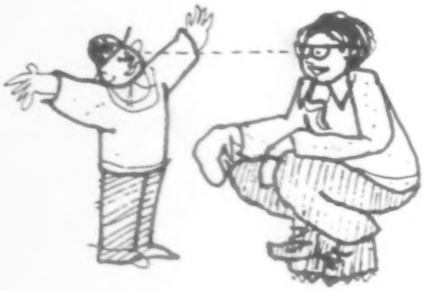
A study done by the Department of the Environment (1973) of England showed that in one play area, one third of the activities going on depended on having an adult playleader. On another play area studied, the percentage of children involved in passive activities dropped and the percentage involved in "constructive" activities (e.g., arts and crafts) climbed drastically when a playleader was added. Further, the number of children using the playground increased while the playleader was there and dropped again when the playleader left.

A type of play area which requires a special playleader is an adventure play area. Harvey in Bengtsson (1972) says:

> *Whether pre-school children come alone to the playground or with older children, it is important to have a member of staff qualified or experienced to work with younger ones. As in all play schemes, the quality of the work will depend on the sympathetic understanding of the staff. The better the insight they have into the world of children, the more valuable their work will be. Perhaps the youngest children, unable to express themselves in words, are the ones most difficult to understand and most in need of help.* (p. 54)

All sources on adventure play agree that a playleader (possibly with other adult help) is essential. As to the qualities of this person, Lady Allen in Pollowy (1977) says:

> *He or she must be a mature person who provides the background for the children's own initiative and who is willing to act rather as an older friend and counsellor than as a leader.* (p.



a play leader knows...

The American Adventure Play Association (1978) advises that education is not really an important factor in fitting an individual for playleadership:

> *Generally, experience in a number of related areas and/or the personal qualifications of the individual were considered to be far more important than education in the formal setting.* (p. 20)

Lady Allen (1968) gives caution in regard to the selection of a playleader:

> *Only rarely do the trained youth leaders or school teachers feel at home in so unorthodox a situation. Perhaps they have too much to unlearn before they can begin.* (p. 56)

PATTERN

PLAYLEADERS

SELECTED PLAY AREAS SHOULD BE STAFFED WITH ADULT PLAYLEADERS.

RECOMMENDATIONS

- Outdoor spaces connected to the child-care facility should be easily supervisable by child-care staff. Outdoor play connected to child-care centers should always be staffed and available for children. Emphasis on "drop-in" use is applicable for military base facilities.
- Adventure play areas must be professionally staffed whenever they are open.
- Other play spaces should be staffed only on the basis of need. Most areas near housing will be naturally supervised by parents and other adults in the area.
- Staff should be chosen on the basis of experience and personal qualities rather than educational degrees acquired.
- Special "one-time" staff to travel from play area to play area to do storytelling, puppet shows, etc. outdoors may be considered as part of the budget for play area staffing.

PHYSICAL MASTER PLANNING GUIDELINES

200

Physical master planning involves a series of planning studies and decisions to be made at all Army bases to identify existing land use patterns as regards parks, outdoor recreation, and playgrounds for children, and on this basis to ascertain where the greatest need is for the development of new facilities. This section, then, provides a series of planning guidelines to be used for the assessment of base-wide existing facilities. The guidelines are arranged in a tier system of parks, from base-wide regional parks down to the scale of door-step play. Perhaps ironically, it is a major conclusion of our studies that the most important scale for children is the immediate doorstep and neighborhood, and it is here that later design criteria focus.

These planning guidelines and standards include:

201 The Tiered Park System: A Continuum of Play and Recreation Alternatives
202 Intraservice Regional Park: Tier I
203 Base-Wide Park: Tier II
204 Adjacent Neighborhood Parks: Tier III
205 Neighborhood Park: Tier IV
206 Comprehensive Neighborhood Playground: Tier V
207 Play Lots: Tier VI
208 Home Based Play Areas: Tier VII
209 Links: Tier VIII

201 THE TIERED PARK SYSTEM: A CONTINUUM OF PLAY AND RECREATION ALTERNATIVES

ISSUE

MANY COMMUNITIES HAVE ONLY ONE ISOLATED PARK OR PLAYGROUND, WITHOUT OPPORTUNITIES FOR CHILDREN AND ADULTS TO CHOOSE ALTERNATIVES.

DEFINITION

A tiered park system is a coordinated collection of small to large play areas and parks connected by park links. The system is designed to facilitate the distribution of a variety of large and small, linear and concentrated, quiet and noisy, traditional and innovative recreation and play activities for children and adults. The parks range from those focused on natural features (resource oriented) to those that require special facilities (facility oriented).

JUSTIFICATION

The proposed tiered park system is modeled after the tiered park systems used by many regional, state, and large municipal or city-county park systems which strive to offer a variety of recreation alternatives to the areas they serve. The importance of play recreation and leisure are described elsewhere in the criteria document as well as the potential for a park system to contribute to the quality of life in family-housing areas and presumably to higher reenlistment rates for soldier families.

The continuum proposed for military bases is different in a couple of respects from a traditional civilian tiered park system. First, the proposed system raises the status of the smallest parks, playlots, and home-based play, to the status of tiers both because of recent understandings about the developmental relevance of close-to-home play and the predominant form of family-housing areas.

Military family housing areas are slightly more dense than most new civilian areas, and they use housing types, duplexes, and multiplexes that are not as typically found in new civilian development. In addition, new family-housing areas are more clearly based on a modified "Radburn plan" style of community planning (Travel Report, 1978) than are all but a few civilian settings.

Parks, especially close-to-home totlots and linked areas, are traditionally major features in this type of area. Play needs of multi-family housing in general are more clearly solved by small parks in the housing development, traditionaly called "tot lots " (and covered in the below design guidelines by SHARED OPEN SPACE; INFORMAL PAVED AREAS; and SEMI-ENCLOSED PLAY SPACES FOR YOUNG CHILDREN) than by neighborhood parks (Cooper, 1975) which is the smallest park in the typical civilian tiered park system.

The second difference is that linking park areas have also been raised to a tier status, both because of their multi-age group importance, adult walking, youth biking, jogging, expanding world for young children, and because linking is a fundamental part of the concepts behind Radburn master planning.

Gold (1977) lists a variety of standards for planning public recreation spaces which apply to the proposed tiered system. His source is Shivers and Hjelte (19):

- *Buildings and grounds of the local public school system should be designed for multipurpose utilization and made available for use by the public recreational service department, as well as other community-based groups, when such utilization does not interfere or come into conflict with the established curriculum. In return, the facilities and spaces of the public recreational service system should be made available to the public school system under reciprocal agreements.*

- *Duplication of areas and facilities may be avoided by official agreements concerning the incorporation of public school plans into the total public recreational service master plan.*

- *Recreational service spaces may be developed adjacent to schools.*

- *If certain neighborhoods of the community do not contain schools, other recreational service places should be situated there to serve the needs of the residents.*

- *The plan for acquiring and developing recreational places for a given municipality should give cognizance to spaces beyond the present political borders of the city.*
- *Planning for recreational places within a system should place a premium on integration and relating all recreational places in the public domain to more effectively serve the constituent population.*

MASTER PLANNING PATTERN

A TIERED AND LINKED PARK SYSTEM: A CONTINUUM OF PLAY AND RECREATIONAL ALTERNATIVES

COMPLETE A TIERED PARK SYSTEM FOR EACH MILITARY RESERVATION FIRST BY STUDYING AND ANALYZING EXISTING PARKS AND OUTDOOR RECREATION AREAS FOR CHILDREN AND ADULTS RELATIVE TO THE FOLLOWING CHART; SECOND, BY PLANNING NEW PARKS AT TIERS CURRENTLY MOST UNDERDEVELOPED; AND THIRD, BY DEVELOPING LINKS BETWEEN PARKS

RECOMMENDED STANDARDS

The following chart (Summary of Planning Standards for Typical Leisure and Recreational Activities) both summarizes planning standards for the tiers in civilian park systems and summarizes the recommended standards for military bases. The chart also illustrates the population served by each tier by identifying matching family housing areas on military bases visited by the consultants (Travel Report, 1978).

SUMMARY OF TYPES OF PARKS AND PLAY AREAS AND THE POPULATION THEY SERVE

TYPES/TIERS & LINKS	CIVILIAN SUMMARY ①				RECOMMENDED FOR MILITARY				EXAMPLES
	ACRES/1000	SERVICE RADIUS	RECOMMENDED SIZE	POPULATION SERVED	ACRES/1000	SERVICE RADIUS	RECOMMENDED SIZE	POPULATION SERVED	
I INTRA-SERVICE REGIONAL PARK	5-15	$\frac{1}{2}$-1 HOUR DRIVE	250+ ACRES	40,000	10	10 MILES	250 ACRES MIN. (W/O GOLF)	OVER 40,000	SAN DIEGO (>100,000) HONOLULU (>100,000)
II BASE WIDE PARK	4-5	3-4 MILES	100-200 ACRES	45,000	2.5	4.0 MILES	100-200 ACRES MIN. (W/O GOLF)	20,000-40,000	LARGE BASE: FT. HOOD (19,000) FT. BRAGG (18,000)
III ADJACENT NEIGHBORHOOD PARK	2.0	$\frac{1}{2}$-2 MILES	20-100 ACRES	15,000-40,000	2.5	1.0 MILES	20-100 ACRES	6,000-10,000	ADJACENT FAMILY HOUSING AREAS: FT. HOOD; COMANCHEE I, II, III (8400) FT. BRAGG; ANZIO & CORRIDOR (7000) SMALL BASE: FT. BOLLING (<6,000)
IV NEIGHBORHOOD PARKS	1.5	$\frac{1}{2}$-1 MILE	10-20 ACRES	5,000-10,000	2.5	$\frac{1}{2}$ MILE	8-10 ACRES (5 MIN.)	2000-4000	LARGE FAMILY HOUSING AREA: FT. HOOD; COMANCHEE III (8400) FT. BRAGG; ANZIO (3500) ADJACENT SMALL HOUSING AREAS: FT. HOOD; PERSHING & VENABLE (3500)
V COMPREHENSIVE NEIGHBORHOOD PLAYGROUNDS	1.25	$\frac{1}{4}$-$\frac{1}{2}$ MILE	2-6 ACRES	2500-6000	1.0	$\frac{1}{2}$ MILE	3-5 ACRES	2000-4000	SMALL FAMILY HOUSING AREA: FT. HOOD; PATTON PARK (300) FT. BRAGG; YADKIN (1200) PART OF LARGE FAMILY HOUSING AREA ADJACENT SMALL FAMILY HOUSING AREAS.
VI PLAYLOTS/ SHARED OPEN SPACE	$\frac{1}{4}$	500 FEET	$\frac{1}{5}$-1 ACRE	500	80 ¢ PER FAMILY (OR) 05 AC PER 1000	VISIBLE FROM UNITS SERVED	4000-5000 ¢	200-500	SUB-FAMILY HOUSING AREA: GROUPS OF 30 HOUSING UNITS E.G. @ FT HOOD, WALKER VILLAGE: 6 PLAYLOTS @ 1/200 POP. 10 PLAYLOTS @ 1/350 POP.
VII NEIGHBORHOOD AND HOME BASED PLAY					DESCRIPTIONS IN TEXT				NEAR HOME: DOORSTEPS, CARPORTS, SIDE YARDS, ETC.
VIII LINKS/NETWORK OF PLAY	12-200 FT. WIDE (VARIES)	—	1 ACRE PER LINEAR MILE	VARIES WITH ACTIVITY	TRAILS 05 LINEAR MILE	VARIES	100-200 FT. WIDE	VARIES	LINEAR PARKS BETWEEN: II, III, IV, V, VI, VII
					LINEAR PARKS .3-.5 LINEAR MILES	VARIES	50-200 FT. WIDE	VARIES	

NOTES:

① AVERAGES AND RANGES OBTAINED FROM FOLLOWING CHARTS OF VARIOUS SOURCES.

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SUMMARY OF PLANNING STANDARDS FOR TYPICAL LEISURE AND RECREATIONAL ACTIVITIES

STANDARDS (SOURCE: SEWRPC 1977)

ACTIVITIES	FACILITY	FACILITY SIZE	POPULATION SERVED	FACILITY PER 1000 RESIDENTS	SUGGESTED SUPPORT FACILITIES	SUPPORT FACILITY AREA	TOTAL AREA (ACRES)	SERVICE RADIUS
BASEBALL	DIAMOND	2.8 ACRES	10,000	.10	PARKING BUFFER	1.7 ACRES	4.5	2.0 MILES
SOFTBALL	DIAMOND	1.7 ACRES	1,666	.60	PARKING BUFFER	.98 ACRES	2.68	1.0 MILES
BASKETBALL	GOAL	.07 ACRES	885	1.13			.07	.5 MILES
TENNIS	COURT	.15 ACRES	1,666	.60	PARKING BUFFER	.17 ACRE	.32	1.0 MILES
ICE SKATING	RINK	.30 ACRES	6,666	.15	WARM HOUSE	.05 ACRE	.35	.5 MILES
SWIMMING (POOL)	POOL	.13 ACRES	66,600	.015	BATHHOUSE PARKING	1.09 ACRE	1.22	3.0 MILES
PLAYFIELD		1.0 ACRES	2,000	.50	BUFFER	.65 ACRE	1.65	.5 MILE
PLAYGROUND		.25 ACRES	2,380	.42	BUFFER	.37 ACRE	.62	.5 MILES
GOLF	18 HOLES	135 ACRES	25,000	.04	CLUBHOUSE BUFFER, PARK.	50 ACRES	185.	10 MILES
PICNICKING	TABLE	.07 ACRE	115	8.75	PARKING SHELTER BUFFER	.04 ACRE	.11	10 MILES
SKIING (HILL)	SLOPE	1.0 ACRE	10,000	.10	CHALET, TOWS PARKING, ETC.	1.10 ACRE	2.1	25 MILES
SWIMMING (BEACH)	BEACH	40#/LIN.FT.	38/LIN.FT.	32 LIN.FT.	PARKING BATHOUSE	10#/LIN.FT.	50#/LIN.FT.	16 MILES
CAMPING	CAMP SITE	.33 ACRE	550	1.82	UTILITIES NATURAL AREA	1.5 ACRES	1.83	25 MILES
HIKING/SKI TOURING	TRAIL	.97 ACRES/LIN.MI.	6,250	.16 LIN.MI.	①	24.2 ACRES/LIN.MI.		
JOGGING	TRAIL	1.45 ACRES/LIN.MI.	12,500	.08 LIN.MI.	①	24.2 ACRES/LIN.MI.		
BICYCLING	TRAIL	1.45 ACRES/LIN.MI.	6,250	.16 LIN.MI.	①	24.2 ACRES/LIN.MI.		
PLEASURE WALKING	TRAIL	1.45 ACRES/LIN.MI.	6,250	.16 LIN.MI.		24.2 ACRES/LIN.MI.		
PLEASURE DRIVING	MARKED ROUTES							
HORSEBACK RIDING	TRAIL	1.21 ACRES/LIN.MI.	20,000	.05 LIN.MI.	①	24.2 ACRES/LIN.MI.		
SNOWMOBILING	TRAIL	1.45 ACRES/LIN.MI.	10,000	.11 LIN.MI.	②	24.2 ACRES/LIN.MI.		
NATURE STUDY	TRAIL	.73 ACRES/LIN.MI.	50,000	.02 LIN.MI.	①	24.2 ACRES/LIN.MI.		
SIGHTSEEING								
HUNTING								
FISHING	LAKE/POND	20 ACRES	25,000	.04				
BOATING/SAILING	LAKE	100 ACRES	50,000	.02				
WATERSKIING	LAKE	100 ACRES	50,000	.02				

NOTES:

① LOCATED IN A RECREATION CORRIDOR. BACKUP LANDS WITH NATURAL RESOURCE AMENITIES SHOULD BE INCLUDED AS SUPPORT.

② LOCATED ON PRIVATE LANDS (LEASED FOR PUBLIC USE).

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The following recommendations explain some of the relationships and links between the various tiers:

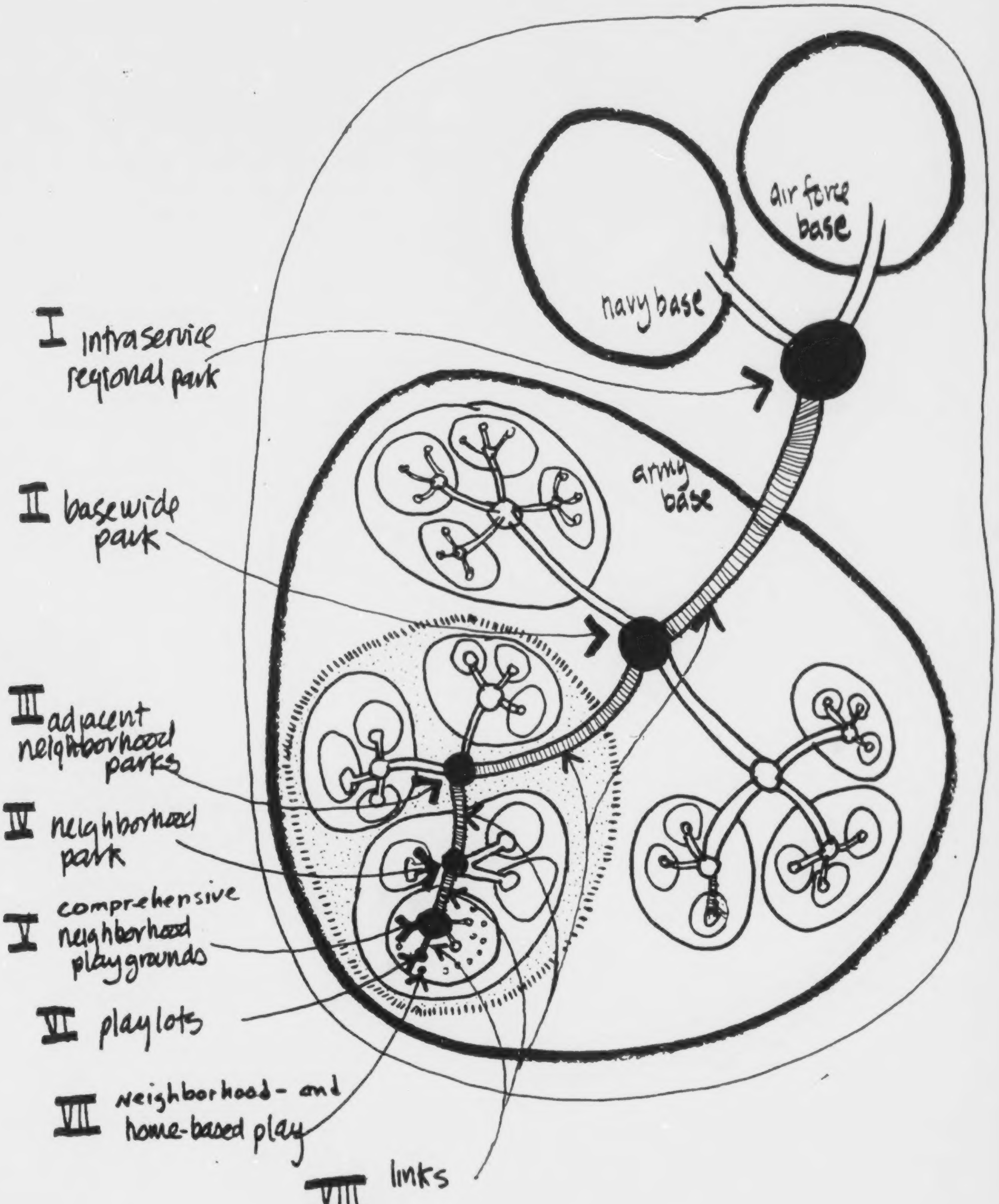
- Some parks and play areas may be associated with schools because they share similar catchment areas, e.g., Tiers II, IV.
- School lands and play fields are not calculated as a part of the park system although they may reduce the demand for some specific activity.
- Parks in all tiers should have some noteworthy natural feature.
- Small isolated housing areas of, say, 100 families may need space and activities provided in Tier V and not just Tier VI.
- Special play parks should be considered for base commercial areas.
- Special types of parks like adventure playgrounds and natural play areas should be provided in Tiers III, IV, V and even VI if there is local support.
- Each base should have a Tier II park.
- Tier I, II, and III parks include elements of Tier IV, V, and especially VI parks as part of their overall design.
- Activities at Tiers VI and VII should be provided before general base-wide parks are developed.
- Specific base-wide activities like swimming and league baseball play may take presidence over general park development based on local preference, or they may be incorporated into a Tier II park.
- Provide a full range of types of developmentally-appropriate play areas for each Tier.
- In programming types of play areas, consider social, intellectual, and physical developmental needs.

- Provide a variety of linked experiences (see NETWORK OF PLAY) within a one-mile radius of each home. (A one-mile radius is the average home range of young children with bicycles.)
- Provide COMPREHENSIVE PLAYGROUNDS at Tiers III and IV, and interconnect them with NETWORK OF PLAY.
- Consider as part of a community library or recreation center the possibility of a modest hands-on children's museum.

The illustration on the following page diagrams the basic structure of a tiered park system for a mythical region with three military bases with c. 1000,000 people living on the three bases including 40,000 people living in family-housing areas on an imaginary army base. (Fort Lewis Military Reservation, Washington is somewhat an example of this situation.)

RELATED ITEMS	TIERS I-VIII NEIGHBORHOOD-BASED PLAY NETWORK OF PLAY COMPREHENSIVE PLAYGROUND

general diagram of a tiered & linked park system....


air force base
navy base
I intraservice regional park
army base
II basewide park
III adjacent neighborhood parks
IV neighborhood park
V comprehensive neighborhood playgrounds
VI playlots
VII Neighborhood- and home-based play
VIII links

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202 INTRASERVICE REGIONAL PARK: TIER I

ISSUE

PEOPLE NEED SOME LARGE, EXPANSIVE OUTDOOR AREA FOR HIKING, WALKING, PICNICKING, QUIET DAYS IN THE COUNTRY TO RELIEVE THE BOREDOM, MONOTONY, AND PRESSURE OF MANY JOBS.

DEFINITION

Tier I sites are defined as large outdoor recreation sites serving several large bases. Sites are selected for their natural features and recreational value and the character of their natural resources. Tier I parks provide opportunities for participation in a wide variety of resource-oriented outdoor recreation activities such as boating, skiing (downhill and cross-country), hiking, camping, picnicking, swimming, and golf. This tier serves both the single military personnel as well as military families.

JUSTIFICATION

A few regional situations exist where several services have large bases (e.g., San Diego; Fort Lewis Military Reservation, Washington). Planning for what is called natural resource-oriented activities in a coordinated way between the bases increases the ability of each to serve their services.

The purposes, goals and basic planning, master planning, and facility planning for areas of this scope are covered in *TM5-803-12, Planning and Design of Outdoor Recreation Facilities* (1975) where similar parks are called recreation-conservation areas or outdoor recreation areas.

MASTER PLANNING PATTERN

INTRASERVICE REGIONAL PARKS: TIER I

FOR LARGE MULTISERVICE RESERVATIONS, PROVIDE AN INTRASERVICE REGIONAL PARK.

RECOMMENDED STANDARDS

The following chart summarizes recommended standards for multiservice regional parks that apply to areas with a population over 40,000.

TIER I REGIONAL PARK	STANDARDS			
REFERENCE SOURCE	ACRES PER 1000	SERVICE RADIUS	RECOMMENDED SIZE	POPULATION SERVED
SEWRPC (1977)	5.3	10 MI.①	250+ AC	[47,000]
BEUCHNER (1971)	20.0	1 HR DRIVE	250+ AC.	[12,500]
MILWAUKEE	4.0	—	250+	50-100,000+

NOTES:
① 4 MILES MAX. IN AN AREA OVER 40,000 POP.

- Provide Tier I parks at the following ratio:

  one for intraservice regions of over 40,000 people living in family-housing areas on or off base.
- The park should be within 10 miles of a majority of the families.
- Plan for 10 acres/1000 eligible people.
- Parks should be a minimum of 250 acres.
- Parks with golf courses should be an additional 90 (9 holes) - 180 (18 holes) acres.

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203 BASE-WIDE PARK: TIER II

ISSUE	LARGE MILITARY BASES NEED SUFFICIENT OUTDOOR RECREATION TO PERMIT SINGLE SERVICE PEOPLE AND FAMILIES ACCESS TO MAJOR RECREATION POSSIBILITIES WITHOUT HAVING TO LEAVE THE BASE.
DEFINITION	Tier II sites are defined as large outdoor recreation sites serving a large base with a large eligible family population. Like Tier I sites, these sites are selected for their natural features, recreational value, and the character of their natural resources. Tier II parks, however, provide for a smaller variety of recreation facilities and have smaller areas devoted to any single activity. Activities typically include boating, skiing (downhill and cross-country, hiking, camping, picnicking, swimming, and golf. This park serves single military personnel as well as military families.
JUSTIFICATION	Large bases like Ft. Hood and Ft. Bragg, and especially those not close to major cities, may need to provide resource-oriented outdoor activities. The purposes, goals, and basic planning, masterplanning, and facility planning guidelines for areas of this scope are covered in *TM5-803-12, Planning and Design of Outdoor Recreation Facilities* (1975) where similar parks are called recreation/conservation areas or outdoor recreation areas.
MASTER PLANNING PATTERN	BASEWIDE PARK: TIER II PROVIDE BASEWIDE PARKS FOR ALL LARGE MILITARY BASES.
RECOMMENDED STANDARDS	The following chart--based on summaries of standards for similar civilian parks serving similar populations--suggests recommended standards for base-wide military parks. Civilian equivalents of Tier II parks are called a variety of things, including metropolitan parks, multi-community parks, county parks, and district parks. Unfortunately *TM5-803-12* does not list planning standards for outdoor recreation areas.

TIER II
BASE-WIDE PARK

	STANDARDS			
REFERENCE SOURCE	ACRES PER 1000	SERVICE RADIUS (MILES)	RECOMMENDED SIZE	POPULATION SERVED
SEWRPC	2.5 MIN	4	100-250	40,000 MIN
NEZ	2	3	100-200	[20-40,000]
RUTLEDGE	—	—	100-200	—
MILWAUKEE	5.5	3-4	100, UP	[55,000]
BEUCHNER (1971)	5.0	½ HR DRIVE	100 +	1/50,000
NATIONAL REC. ASSOC.	5.0	—	100 +	[50,000]

- Provide Tier II parks at the following ratio:

  one for bases with between 20,000 and 40,000 people living in family-housing areas on or off base.

- The park should be within four miles of a majority of the families.
- Plan for 2.5 acres/1000 eligible people.
- Parks should be 100 to 200 acres minimum (without golf).
- Parks with golf courses should be an additional 90 (9 holes) - 180 (18 holes) acres.

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204 ADJACENT NEIGHBORHOOD PARKS: TIER III

ISSUE

SOME RECREATION ACTIVITIES, THOUGH NEEDED CLOSE TO THE NEIGHBORHOODS OF USERS, REQUIRE BUFFERING DUE TO NOISE GENERATION.

DEFINITION

Tier III parks are defined as medium-sized outdoor areas serving several adjacent family-housing areas or a small base. Sites are selected to some extent for thier natural features and primarily for their ability to support specific activities. Tier III parks provide space and facilities for recreational activities like tennis, swimming, league baseball, softball, or basketball, while providing green space and open space for other specific activities preferred by the community. Some sites will be selected primarily for the activity such as a "feature park" at a base commercial area.

JUSTIFICATION

This tier provides general, maintained open space for the small base or for groups of housing areas on larger bases. Many of the activities are highly active and noisy, or happen at late hours, and attract teen-agers, thus justifying buffering by being in a larger park than provided in Tiers IV-VII.

Special activity parks in unique locations like feature or theme parks in commercial centers, or innovative combinations like a swimming pool and a water-play recreation area, or a comprehensive playground, a major natural play area (environmental yard), and parks associated with a school would fall into this category (or: Tier IV). This is the smallest park in the tiered system where swimming pools are recommended or found. In fact "it is generally not feasible in developments of less than about 200 units /c. 7600 people/ to provide such facilities as a swimming pool, gym, hobby workshop, child-care center, etc." (Cooper, 1975, p.

MASTER PLANNING PATTERN

ADJACENT NEIGHBORHOOD PARKS: TIER III

PROVIDE LARGE, COMPREHENSIVE, OR MORE SPECIAL-FUNCTION PARKS FOR EVERY 6000-10,000 PEOPLE ADJACENT TO, YET BUFFERED FROM NEIGHBORING COMMUNITIES.

RECOMMENDED STANDARDS

The following chart summarizes civilian standards for similarly-sized parks, usually called community parks:

TIER III ADJACENT NEIGHBORHOOD PARK	STANDARDS			
REFERENCE SOURCE	ACRES PER 1000	SERVICE RADIUS (MILES)	RECOMMENDED SIZE	POPULATION SERVED
SEWRPC	2.2	2 MAX.①	25-100 AC	[12-50,000]
BEUCHNER (1971a)	—	—	20-37	—
BEUCHNER (1971b)	2.5	½ - 3 MAX	20-100	10-50,000
NEZ	2.5	2 MAX.	40-100	20,000
MILWAUKEE	1	1-2	30	30,000
RUTLEDGE	—	—	15-25	—

Note: ① .75 - 1.5 miles preferred

- Provide Tier III parks at the following ratio:

  one for every 6000-10,000 people living in family-housing areas.

- The parks should be within a one-mile radius of the users.
- Plan for 2.5 acres/1000 people.
- Tier III parks should be 20-100 acres, depending on activities selected and on available land.
- Feature or special activity parks, like adventure playgrounds, may be in smaller parks.

RELATED ITEMS

COMPREHENSIVE PLAYGROUNDS
ENVIRONMENTAL YARDS
WATER PLAY AREAS

205 NEIGHBORHOOD PARK: TIER IV

ISSUE

NEIGHBORHOODS DESERVE MORE THAN THE ALL-TOO-COMMON METAL, FIXED-IN-PLACE, MINIMAL, TOT LOT FOR CHILDREN'S--AND ADULTS--OUTDOOR RECREATION.

DEFINITION

Neighborhood parks are small sites for outdoor recreation activities serving either large family-housing areas or groups of smaller family-housing areas. Sites are selected primarily for their ability to support local recreational needs and preferences. Activities include open play fields for intensive recreation pursuits such as baseball, tennis, basket ball, or special types of playgrounds like adventure playgrounds or natural play areas (environmental yards). Parks in this category are frequently developed in conjunction with school sites.

This park usually includes activities and play areas also found individually in Tiers V and VI. Thus the existence of a Tier IV park immediately close to some houses can preclude the necessity for a separate Tier V or VI park.

Most visitors to neighborhood parks travel less than one mile from home and stay no longer than one or two hours (Southeastern Wisconsin Regional Planning Commission, 1977).

JUSTIFICATION

These parks are the smallest that can handle boisterous activities like league basketball, soccer, or atypical playground types like adventure playgrounds, while providing enough open space to buffer them from family housing areas that they might disturb. However, support facilities such as bleachers, night lighting, and concessions are typically not provided so as to retain the residential character of the neighborhood. The areas typically do not contain sufficient acreage to allow an adequate buffer to the surrounding housing (Southeastern Wisconsin Regional Planning Commission, 1977).

Primary participants in various playfield activities include school-age children of both sexes. Common activities include volleyball, tag, and kite flying as well as informal football and other ball games.

> *Recreation lands at the neighborhood level should most desirably be provided through a joint community-school district venture with the facilities and recreational land area required to be provided on one site available to serve the recreational demands of both the school student and the resident neighborhood population. . . . /The/ acreage standards relate to lands required to provide for recreational facilities typically located in a neighborhood and are exclusive of the school building site and associated parking area and any natural areas which may be incorporated in the design of the park site such as drainageways and associated storm water basins, areas of poor soils and flood lands areas.* (Southeastern Wisconsin Regional Planning Commission, 1977, p.

ACTIVITIES

Local preference should determine the range of activities provided in this tier. In Tiers V and VI the designated play advocate can encourage neighborhoods to play and support types of play areas and activities that they are not familiar with, like adventure playgrounds and natural play areas.

The following are some more traditional lists of what is expected in a neighborhood park.

According to National Park Recreation and Open Space Standards as reported by Gold (1973, p. 312), a neighborhood park would include the following:

1.	Play apparatus area - preschoolers	.25 acre
2.	Play apparatus area - older children	.25
3.	Paved multi-purpose courts	.50
4.	Recreation center building	.50
5.	Sports fields	5.00
6.	Senior citizens' area	.50
7.	Quiet areas and outdoor classroom	1.00
8.	Open or "free play" area	.50
9.	Off-street parking	2.33
10.	Landscaping (buffer and special areas)	3.00
11.	Undesignated space	1.45
	Total	16 acres

Our recommendations, based on more recent thinking and on child-development objectives, differ greatly as regards numbers 1 and 2. (See the entire set of patterns for specific design guidelines.)

According to the Urban Land Institute, and reported in their Community Builders Handbook of 1960, a "neighborhood" playground for 5000 people would include the following:

1. *Apparatus (preschool and older children areas)*
2. *Open space for informal play*
3. *Surfaced play areas for court games like tennis, handball, shuffle board, volleyball*
4. *Field area for softball*
5. *Quiet area for storytelling and quiet games*
6. *Shelter house with toilet facilities*
7. *Wading pool*
8. *Elderly area for table games*
9. *Landscape features*

(Urban Land Institute, 1969, p. 150)

Gold (19) also reports the following activities recommended by *Recreation Magazine* in January 1963:

1.	Play lot for preschool children and mothers		10,000 sq. ft.
2.	Apparatus area for older children		10,000
3.	Shelter house or recreation building		3,000
4.	Open area for group games and informal play		21,000
5.	Wading or spray pool		1,600
6.	Quiet areas for crafts, storytelling, etc.		2,800
7.	Paved multi-use area for games, roller skating, etc.		10,000
8.	Special game courts		18,000
9.	Lawn areas for games such as croquet, clock golf, etc.		10,000
10.	Field for team games and sports		130,000
11.	Older adults area		10,000
12.	Picnic area for family and small groups		20,000
13.	Instructional swimming pool		6,000
14.	Landscaped areas, borders, and buffer strips		43,000
15.	Parking and service drive		17,000
16.	Paths and walks		8,000
17.	Undesignated space (10%)		32,000
	Total	(8.17 acres)	356,052 sq. ft.

The point in recording these lists is to reinforce the importance of providing a variety of activity areas in a neighborhood park and the importance of local preference given that lists of recommended spaces differ from source to source.

Cooper Marcus reports that "in moderate-to-higher-income developments, the most used and requested adult recreation facilities are swimming pools and tennis courts," (1975, p.

Two perhaps unexpected activities show up on analysis: buildings with toilets and parking areas for those who drive.

- Provide Tier IV parks at the following ratio:

  one for every 2000-4000 people living in family-housing areas.

- The parks should be with a half-mile radius of the users.
- Plan 2.5 acres/1000 people.
- Tier IV parks should be 8-10 acres depending on activities selected and land available (minimum of 5 acres)
- Community preference should determine the range of activities provided in this park.
- An adventure playground should be considered as a possible feature of each Tier IV park.
- A natural play area should be considered as a possible feature of each Tier IV park.
- Specific needs of individual age groups should be responded to, especially those of teens and adults.
- A public toilet and small recreation building should be provided if not otherwise available.

RELATED ITEMS	COMPREHENSIVE PLAYGROUND ENVIRONMENTAL YARDS CREATIVE PLAYGROUNDS ADVENTURE PLAYGROUNDS INFORMAL PAVED AREAS OPEN GRASSY PLAY FIELDS

MASTER PLANNING PATTERN

NEIGHBORHOOD PARKS

PROVIDE NEIGHBORHOOD PARKS WITHIN THE CONFINES OF WELL-DEFINED NEIGHBORHOODS FOR EVERY 2000-4000 people.

RECOMMENDED STANDARDS

The following chart summarizes recommended standards for neighborhood parks.

TIER IV NEIGHBORHOOD PARK

	STANDARDS			
REFERENCE SOURCE	ACRES PER 1000	SERVICE RADIUS (MILES)	RECOMMENDED SIZE	POPULATION SERVED
SEWRPC	1.7	$\frac{1}{2}$-1	<25 ACRES ①	6500
MILWAUKEE (NEIGHBORHOOD PARK)	1.0	$\frac{1}{2}$-1	8	8000
RUTLEDGE	—	—	2-5	—
NEZ	2.0	$\frac{1}{2}$	5-10	[2500-3000]
BEUCHNER (1971)	—	—	7.15-16	—
NATL. REC. ASSOC.	1.25	—	12-20	[12,000-20,000]
URBAN LAND INST. (1960)	1.2	$\frac{1}{2}$ MAX.	6	5000
RECREATION MAG (JA. 1963)	1/1475	4	18	2700
SEWRPC	3.3 ②	$\frac{1}{2}$-1	22	6500
AM. PUBLIC HEALTH ASSOC.	[2.4]	—	12	3000
MILWAUKEE (PLAYFIELD)	1.25	$\frac{1}{2}$-1	10	[10,000]
GOLD	[1]	—	6.7-8	6,000

NOTES:

① PARKS LESS THAN 5 ACRES ARE NOT TYPE IV.

② COMBINED SCHOOL AND PARK PLAY AREAS.

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206 COMPREHENSIVE NEIGHBORHOOD PLAYGROUND: TIER V

ISSUE

CHILDREN AND ADULTS REQUIRE MORE THAN ONE OUTDOOR RECREATION ACTIVITY NEARBY FOR FAMILY RECREATION.

DEFINITION

Comprehensive neighborhood playgrounds are small sites serving several small family-housing areas or portions of a few large family-housing areas. Sites are selected primarily for their ability to support local recreational needs and preferences. Activities are smaller in scale and are more informal than in a Tier IV park.

JUSTIFICATION

Comprehensive neighborhood playgrounds are important as a place that extends the child's home range and provides space for informal play with children outside their immediate neighborhood and with parents.

While Cooper Marcus (1975) identifies the number of dwellings grouped around a common open space large enough for play should vary between approximately 20 and 100 (c. 760-3700 people), she also cautions the designer with this comment:

> *Neighborhood play provision should not be regarded as a substitute for play space within the housing development [Tiers VI and VII]. Play space within the neighborhood but beyond the bounds of the specific housing development is not a realistic substitute for areas which children can use casually.* (p.

Neighborhood playgrounds are important to 5-10 year olds. This is the place where,

> *Depending on the size of the development, several half-courts for basketball are preferable to one full court. Some courts could be designed with the basket at less than standard height so as to exclude larger teenage boys, who might take over the courts from younger boys. The courts should be located so as to minimize noise.* (Cooper Marcus, 1975, p.

In addition:

> *Space should be provided for informal soft ball games. Children are remarkably adaptable, and do not necessarily need a softball field in order to play softball. A reasonably level, grassy, open space relatively free of obstruction, will undoubtedly be used for [a variety of] ball games.* (Cooper, 1975, p.

ACTIVITIES

According to *Recreation Magazine* (1963), activities included are the following:

A Children's Playground	
Playlot for preschool children and mothers	10,000 sq. ft.
Apparatus area for older children	12,000
Open area for group games and informal play	41,500
Wading or spray pool	3,000
Paved multiple-use area for games and activities	10,000
Quiet areas	5,000
Field for children's team sports	60,000
(3.3 acres)	141,500 sq. ft.

Rutledge describes neighborhood playground activities as including the following:

Neighborhood Playground

1. Play apparatus
2. Turf area
3. Paved court
4. Story-telling ring
5. Shelter
6. Wading or spray pool
7. Table game area
8. Picnic shelter

2.5 to 10 acres

Rutledge, 19 , p.

Although the recommendation is potentially inconsistent with more subdued, less boisterous activities, Southeastern Wisconsin Regional Planning Commission recommends "each urban area having a population of 2500 or greater should have at least one baseball diamond" (1977, p. 290).

MASTER PLANNING PATTERN

COMPREHENSIVE NEIGHBORHOOD PLAYGROUND

FOR EVERY NEIGHBORHOOD PARK AND FOR EVERY 2000-4000 PEOPLE, PROVIDE A COMPREHENSIVE NEIGHBORHOOD PLAYGROUND FOR CHILDREN OF ALL AGES AND FOR ADULTS.

RECOMMENDED STANDARDS

The chart on the following page shows a variety of recommended planning standards for comprehensive neighborhood playgrounds.

- Provide Tier IV parks (comprehensive neighborhood playgrounds) at the following ratio:

  one for every 2000-4000 people living in family-housing areas.

- The parks should be within one half mile of the users.
- Plan one acre/800 people.
- Tier IV parks should be 3-5 acres depending on activities and available land.
- Activities identified for particular sites should be the result of a decision-making process that includes local user participation.

RELATED ITEMS

COMPREHENSIVE PLAYGROUNDS
INFORMAL PAVED AREAS
OPEN GRASSY PLAY AREAS.
NESTS FOR QUIET PLAY
WATER PLAY AREAS
DESIGNATED PLAY STRUCTURES

TIER V NEIGHBORHOOD PLAYGROUNDS

REFERENCE SOURCE	STANDARDS			
	ACRES PER 1000	SERVICE RADIUS (MILES)	RECOM-MENDED SIZE	POPULATION SERVED
SEWRPC	—	—	1.7 ACRES	—
RUTLEDGE	—	—	$2\frac{1}{2}$-10	—
URBAN LAND INST. (1960)	—	—	$2\frac{1}{2}$ MIN	—
NATL. REC. ASSOC.	2.5	—	2	[800]
RECREATION MAG (JA. 1965)	[.5]	$\frac{1}{2}$	3	6000
POLLOWY (1977)	—	—	$1\frac{1}{2}$ MIN ①	—
LADY ALLEN (1968)	—	—	$\frac{1}{4}$ MIN - $1\frac{1}{2}$ MAX	—
PUBLIC HEALTH ASSOC. (1960	[4.5]	—	4.75-12	1000-5000
MILWAUKEE (PLAYGROUND)	1.25	$\frac{1}{4}$ - $\frac{1}{2}$	3	[3750]
RECREATION MAG. (JA. 1963)	[1.33]	$\frac{1}{2}$	8	6000
URBAN LAND INST.	—	—	5% TOTAL AREA	2000-5000
BOR (1964) ②	[1.25]	$\frac{1}{2}$	4	[3200]-8000
NRPA (1967) ③	[1.25]	$\frac{1}{2}$	2.75	[7200]-8000
MEYER & BRIGHTBILL (1964)	[1.25]	$\frac{1}{2}$	3-5	[2400-4000]-5000
BUTLER (1959)	[1.25]	$\frac{1}{2}$	3	[2400] - 7000
NEZ (1961)	1.5	$\frac{1}{2}$	4	[2600] VARIABLE
CHAPIN (1965)	[1.25]	$\frac{1}{2}$	5	[4000] VARIABLE
DOELL (1963)	1	$\frac{1}{2}$	6	[6000] - 8000
FED SECURITY AGENCY (1955)	[1.25]	$\frac{1}{2}$	2.75	[2200] - 5000
AM. PUB. HEALTH ASSOC (1948)	[1.25]	$\frac{1}{2}$	2.75	[2200] - 5000
TIME SAVERS STND. (1973)		$\frac{1}{4}$ - $\frac{1}{2}$	6-8 (3 MIN.)	3800 - 5700

NOTES:

1 $3\frac{1}{2}$ ACRES WITH ADVENTURE PLAYGROUND.

2 GUIDEBOOK FOR STATE OUTDOOR RECREATION PLANNING, P 47.

3 OUTDOOR RECREATION SPACE STANDARDS.

207 PLAY LOTS: TIER VI

ISSUE	PROVISION IS NECESSARY FOR DEVELOPMENTALLY-CHALLENGING AND DEVELOPMENTALLY-APPROPRIATE PLAY OPPORTUNITIES CLOSE TO CHILDREN'S HOMES.
DEFINITION	In a multi-tier park system, playlots are small areas serving small neighborhood groupings in family-housing areas. Their design can include a wide variety of traditional or innovative activities and they can appeal to a variety of age groups. The choice of activities should reflect interaction of overall children's developmental needs (physical, intellectual, and social play) and local neighborhood preferences.
JUSTIFICATION	On military bases with existing or planned family-housing areas, play lots provide the most visible evidence of a recreation policy that provides play areas for children. They are an important element in a neighborhood revitalization program because they are small enough so that they can be inserted into most existing housing areas.

Play lots are viewed as an important amenity by those who have them. Cooper Marcus (1975) cites several studies which suggest the following:

> *Many familiar with children, once they have experienced it, like to have access to shared communal open space for play and will be prepared to make do with relatively small private yards or patios in return for this shared space.* (p. 228)

Still, she sees some management issues that must be made clear if the play lot areas are to be a continuing success:

> *It should be made very clear in the lease or residents' manual that communal open spaces are means for children's play, among other activities; in cases where this has not been made explicit, residents without children have complained about "misuse" of the space which they see primarily as an aesthetic amenity.* (1975, p. 229)

Brower and Williamson (1974), in their study of play in several neighborhoods in Baltimore, conclude:

> *A facility that draws children from several different neighborhoods is a likely setting for conflict.* (p. 344)

An observation suggests both the importance of providing adequate play opportunities as well as the relative importance of smaller neighborhood facilities that because of their location and size, don't appear to be a prime turf to conquer.

Other studies also provide observations that recommend the importance of small play groups over larger ones, both for neighborhoods and for play areas at child-care centers.

In the National Day Care Study for the Department of Health, Education and Welfare, directed by Ruopp, preliminary findings of the research have shown that:

> *Small groups work best. The size of the group in which the preschool child spends her/his day-care hours makes the most difference. Small numbers of children and small numbers of adults, interacting with each other, make up the kinds of groups that are associated with better care for children.* (Ruopp, 1978, p. iv)

A reasonable assumption, then, is that outdoor play areas will benefit from similar small groupings.

Central Mortgage and Housing Corporation's (1978) design guidelines also recommend many small playlots over fewer larger ones:

> *To be most effective a preschool play space should not be smaller than 100* m^2 *(c. 1000 sq. ft.) nor larger than 300*m^2 *(3000 sq. ft.). In larger developments, several small play areas for preschoolers are preferable to one large one.* (p. 9)

Their sizes include only the developed play area and don't include other important elements in a play lot: nearby paved and grassy areas.

Clearly, the consensus among the sources is that many small play lot areas are better than a few large areas and that play areas fit the scale and "cozy quality" relating to the size of preschoolers (Central Mortgage and Housing Corpor ation, 1978).

Criteria for appropriate location of play lots on new and existing bases deserves discussion. Team members visiting army bases observed that generally there was available open space between groups of housing units that could be developed into play lots. These areas are generally the result of masterplanning guidelines that apply modified "greenbelt" planning principles to housing area developments that recommend density of housing units so that there is some communal open space between buildings (Travel Report, 1978).

While many sites are available, Cooper and others have made a series of observations that lead to specific recommendations for locations. The most important are proximity to housing, visibility, connection and linkages to other community activities, as well as appropriate microclimates and topography. Cooper Marcus (1975) recommends the following:

> *Enclosed tot lots with sand and suitably sized equipment should be provided in safe locations within view of, and easily accessible from, the dwellings they serve. Several studies report that where tot lots are provided out of view of the majority of houses and poorly equipped, they are virtually never used. Even if the tot lot is within view but requires a circuitous route to get to it, mothers may not want to leave their children there, since they cannot get to them quickly in case of accidents. However, since even in this age group some children tend to be more independent and wander out of sight of home, the entire site should be potentially safe for their play and wanderings.* (p. 233)

ACTIVITIES

Play lots have an unfortunate stereotype. They are thought to be "tot lots," appealing only to small preschool children. In fact, all age groups need play areas close to home; adults and older children will use play lots if activities aimed at them are provided. The cementing of the family is supported when a wider range of activities is provided than just preschool and infant play. If there is a neighborhood organization, play lots can provide gardening or adventure play activities.

If the site is buffered and allows the noise that basketball creates, a half-court basketball hoop could be appropriate. Water play activities, no more dramatic than a series of sprinklers, can attract a wide range of age groups on a hot summer day.

In general, a play lot includes:

1. grassy play area (not a ball field, but big enough for small kids to play kickball or other ball games.

2. paved play areas for wheel play, half-court basketball, ball games

3. a developed area for specific activities mostly aimed at preschoolers

The Central Mortgage and Housing Corporation's design manual for tot lot areas shows designs with all of these elements, although the emphasis in their report is on the developed area. Their plans show the following:

1. Adjacent grassy area		c. 2500 sq. ft.
2. Adjacent paved area		c. 2500 sq. ft.
3. Developed area		
a. creative play area	c. 20%	
b. social play area	c. 20%	
c. physical play area	c. 20%	
d. quiet retreat play area	c. 5%	
e. adult seating	c. 5%	
f. play equipment storage	c. 2%	
g. plantings	c. 13%	
h. raised garden plots	c. 15%	
	± 100%	= c. 2500 sq. ft.
		= 7500 sq. ft.

(Central Mortgage and Housing Corporation, 1978, p. 36)

Other tot lot oriented descriptions of neighborhood play lots include the following:

> *TOTLOT. 2400 to 5000 square feet. Usually includes: chair swings, sandbox, regular swings, slide, climbing apparatus, wading or spray pool, playhouse, turf area, paved area for wheeled toys, benches.* (Rutledge, 19 , p.

Cooper Marcus (1975) recommends the following:

- *a sand pit with water spigot and good drainage*
- *flat surfaces surrounding or within the sand area for sand castles, small wheeled toys, etc.*
- *areas for tricycling*
- *grass for rolling on*
- *comfortable benches with a view for supervising adults; some close to the sand area for the parents of very small children, some further away for the supervision of older preschoolers* (p.

Although very conservative in the range of activities identified, Southeastern Wisconsin Regional Planning Commission identifies the following characteristics of small neighborhood play lots:

> *Playgrounds [play lots] vary in size and facilities provided, from small areas simply providing a few playground apparatuses, such as swings or a sand box, to highly developed areas which may include special areas for preschool children, apparatus areas, and areas for organized games.* (1977, p. 156)

Pollowy (1977) has synthesized several empirical studies done in Great Britain and has come to a series of conclusions about the characteristics of small neighborhood play lots:

- *The number of children who can play in an area comfortably at one time depends on the type of play activity and the age of the children.*

- *Use of a playground increases with size only up to 300 sq. yds [27,000 sq. ft. or a little over ½ acre]. Above that size, use does not increase proportionally.*

- *For play space other than adventure playgrounds, 32 sq. ft. total play area per child bed-space in an area is adequate. [100 children=32,000 sw. sq. ft.]* (1977, p.

MASTER PLANNING PATTERN

PLAY LOTS

PROVIDE 400 TO 5000 SQ. FT. PLAY LOTS (1/10 - 1/8 ACRE) WITHIN HOUSING AREAS FOR APPROXIMATELY 1 FOR EVERY 200-300 RESIDENTS.

RECOMMENDED STANDARDS

The following chart shows a variety of recommendations. The recommendations for military bases reflect the relatively higher proportion of children in military family-housing areas than in civilian settings, and the expressed goal on several military bases of having a "tot lot" for every 50 families (Travel Report, 1978, p.

TIER VI PLAYLOTS

	STANDARDS			
REFERENCE SOURCE	ACRES PER 1000	SERVICE RADIUS	RECOMMENDED SIZE (ϕ)	POPULATION SERVED
RUTLEDGE	—	—	2400 - 5000	—
CCMHC (1978)	10ϕ/BEDRM	100 YDS①	1000 MAX. 3000 MIN	[400 - 450]
URBAN LAND INST. (1960)	—	—	4000 - 5000	—
BELICHNER	[.4/1000]	—	2500 - 44,000	500 - 2500
FT HOOD			C. 1600	200
WAUKESHA CO., WIS.	—	1 BLOCK - 1 MILE	2500	—
WEST BEND, WIS	—	1/8 MILE	33,000 - 66,000	—
FOLLOWY (1977)	—	—	3500	—
DEPT. OF ENVIRONMENT (1973)	35ϕ/CHILD	—	3500	[100 CHILDREN]
ALEXANDER	—	450 FT.	—	500②
BERGSTON (1970)				
TIME SAVERS STANDARDS (1973)	1/100 FAMILIES 1/65 MAX.	[300-400 FT]	21ϕ/FAMILY 2000-4000ϕ	[320 - 600]
SEWRPC (1977)	—	—	—	1/500

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NOTES:

① WITHIN SIGHT

② ONE ADVENTURE PLAYGROUND PER 500 POP.

- Provide play lots at the rate of 80 sq. ft./family (or .5 acres/1000 people or 1 play lot/200-300 people).
- Play lots serve 50-100 maximum (50 preferred) units (200-300 residents), and should be close to the units they serve, preferably visible from the kitchen of a majority of the units they serve.
- Preferred size of play lots is c. 4000-5000 sq. ft.
- About 1/3 of a full-sized play lot should be a developed area.
- About 1/3 of a full-sized play lot should be a grassy area.
- About 1/3 of a full-sized play lot should be a paved area.
- The specific activities identified for the play lot will influence the size of its parts and the overall design.
- Every neighborhood should consider making a play lot a neighborhood-run adventure playground.
- Some play areas should be buffered from some housing units by distance or an architectural or landscape feature.
- Play lots should be built in areas that are sheltered and sunny (FAVORABLE MICROCLIMATE) especially in late morning and early afternoon.
- Each play lot should include at least one special tree planted to provide both a shady area and a memorable image.

RELATED ITEMS

SHARED OPEN SPACE
INFORMAL PAVED AREAS
VIEWS TO AND FROM PLAY AREA
OPEN GRASSY PLAY AREAS
LOOSE PARTS
SEMI-ENCLOSED PLAY AREAS FOR YOUNG CHILDREN
CREATIVE PLAYGROUND
"CHILDREN ONLY" AND MULTI-AGE GROUP PLAY TERRITORIES
WATER PLAY AREAS
CHILDREN'S GARDENS
RETREAT AND BREAKAWAY POINTS

DESIGNATED PLAY STRUCTURES
OUTDOOR STORAGE
PROTECTED SAND AND DIRT PLAY AREA
FAVORABLE MICROCLIMATE
DEGREES OF SHELTER

208 HOME-BASED PLAY AREAS: TIER VII

ISSUE

THE MOST-USED PLAY SPACES ARE SEMI-PRIVATE, UNDESIGNATED PLAY AREAS NEAR THE CHILD'S HOME--THE FRONT STEPS, THE LAWN, THE BACK ALLEY, ETC. THIS POSES A REAL CHALLENGE NOT ONLY TO PLAYGROUND DESIGNERS BUT MORE SO TO HOUSING DESIGNERS AND NEIGHBORHOOD PLANNERS.

DEFINITION

Home-based play areas are characterized by proximity to housing. They include semi-public areas around each housing unit -- yards, car ports, driveways, immediate sidewalk areas close to each child's home. It does not include private enclosed yards and enclosed private play equipment. It is play outside the front door usually within eye contact of home. The radius away from the home within which children will play is related to their home range. "Home range . . . that series of linkages and settings traversed and occupied by the individual in his normal activities " (Anderson & Tindall, 1972, p.

While planning for home-based play as a part of housing areas is a recent trend, the occurrance and recognized preference for play close to home has been documented in many national studies (cf. Cooper, 1975; Hale, 1966; Department of the Environment, 19 ; Bengtsson, 1970; Coates and Bussard, 19 ; Coates, 19).

Home-based play is a necessary tier in an overall master plan for children's outdoor recreation for several reasons including developmental relevancy and actual children's behavior and preferences. While both are intertwined, review of the literature available on each helps identify the importance of planning for home-based play as a first planning step in a multi-tier park and recreation system.

DEVELOPMENTAL RELEVANCE

Home-based play is part of a child's development of a concept of self. Ainsworth and Bell (19) assert that exploratory behavior is supported by the security of attachment. Play close to home provides the attachment and secure base from which a more independent self can be developed.

> *[If] there is no threat of separation the infant is likely to be able to use his mother or a secure base from which to explore, manifesting no alarm in even a strange environment as long as she is present.* (Ainsworth and Bell, 19 , p. 64)

Other researchers have asserted similar conclusions:

> *It is also important, particularly for the very young, that they should be able to play within sight and sound of home.* (Holme and Massie, 1970, p.

Clare Cooper Marcus cites six studies in developing the following conclusion about the needs of preschool children:

> *Children under six and their parents have very distinct needs, and it is most critical that they be met. Most children under six like to play within sight and/or calling distance of their parents or other adults known to them.* (Cooper Marcus, 1975, p. 233)

BEHAVIOR AND PREFERENCES

Information on the way children spend their time playing confirms the importance of close-to-home play to children. Reporting on playgrounds in an inner city neighborhood, Brower and Williamson (1974) suggest the following:

> *There were far fewer children, teens, and adults recreating in these facilities [playgrounds] than immediately around the house. Those playgrounds observed in detail were used well below their technical capacity.* (p.

They go on to conclude:

> *Both census and diary results revealed that home-based recreation accounted for the major portion of recreation time throughout the study area.* (p. 336)

Clare Cooper Marcus (1975) draws a similar conclusion in her book and cites 10 studies which draw the same conclusion:

> *Small children tend to play close to the most frequently used entrance to a dwelling or building.* (p. 234)

In addition she cites 10 studies in drawing another related conclusion:

> *Children tend to play anywhere and everywhere and not just in designated play spaces.* (p. 232)

A study done in England comes to similar conclusions:

> *Although playgrounds are well used in proportion to the space which they occupy, they do not succeed in diverting all the children from the roads and footpaths and other paved spaces. Some of the children on roads and footpaths are walking from one place to another. However, much of the activity in these areas is play in the stricter sense.* (Hole, 1966, p.

In their comparative study of play in several areas in Baltimore, Brower and Williamson (1974) conclude:

> *In the first place, it seems clear that home-based recreation is an extension of domestic life, that it will occur in spaces immediately around the house. In newer suburban areas, home-based recreation takes place mainly in the private open land attached to individual dwellings.* (p.

In our Travel Report (1978) on the basis of research visits to 50 military and civilian sites, we arrived at similar conclusions:

> *At all bases children were observed to play more in the streets, on front porches, around front yards, corners, cul-de-sac drives, and natural areas than they were in any designated traditional type of play spaces, whether they were located behind housing, in the "green belt," or on school playgrounds.* (p.

> *By far the majority of younger children we saw outdoors were in the front yards, near the streets, or on house steps and porches. Relatively very few were seen in the designated play areas behind the housing, except when they were a captive audience as at the Child Care Center.* (p.
>
> *Generally, more children were seen playing with features of the natural environment, and in front of dwelling units, than on designated playgrounds or playing fields.* (p.

Home-based play is characterized by proximity to housing. Proximity is determined by distance, visibility, audibility, convenience, and safety. These characteristics deserve further discussion.

For young children all sources giving data agree that eye contact between child and housing unit is important.

Central Mortgage and Housing Corporation (1978) of Canada quotes research that shows preschoolers are home-centered, with a range of about 100 yards without accompanying adults.

Arvid Bengtsson (1970) also recommends that play for small children be within sight of home to provide feelings of security for both the parent at work around the home, and for the child.

Pollowy (1977) also feels that security of parent and child is important:

> *For these children [preschoolers] the play area should fulfill the function of a large play or discovery room, an adjunct to other living spaces in or near the home, within its immediate safe vicinity so that parent and child can remain within sight and sound of each other.* (p. 127)

The British Department of the Environment (1973) agrees that play areas for young children should be as close to housing as possible.

In recommending that children's play areas be visible, Cooper Marcus says:

> *Irate mothers complained of patios or backyards located on downhill sites where the kitchens were one floor above and the mothers could not keep an eye on their children.* (1975, p.

Interviews with residents in the Baltimore study by Brower and Williamson (1974) indicated that activities occurred in spaces immediately around the home for the following reasons: convenience and safety. Convenience was further explained:

> *Being near home, adults or teenagers were at hand to receive callers, answer the phone, keep an eye on the stove, listen for sleeping children; men could socialize with their friends without leaving their families; young children could be sure that their parents were nearby in case of trouble; people could go out on short notice and for short periods of time between routine chores. The spaces used were not always appropriate, but they were convenient.* (p. 336)

ACTIVITIES

The actual activities of children playing close to home don't fall as clearly into categories of play as do baseball, hiking, or swimming. Small children can appear to an adult to be doing very little while to the children themselves they are doing a lot. They might be examining a leaf, or a found and treasured bolt or washer or shiny rock, or a little water in a puddle or in a dirt play area. Their play might be simply sitting and sharing with a friend. The activities are not dramatic. Still an environment that is empty, without bushes to get behind, rock or sand to pick up or stand on, stoops or steps to sit on, or secure protected private outdoor places to leave a doll sitting in, can't fulfill the requirements of the home-based play tier in the design of a tiered park system.

MASTER PLANNING PATTERN

HOME-BASED PLAY AREAS

IN PLANNING HOUSING, OR IN MAKING INNOVATIONS TO HOUSING OR NEIGHBORHOOD DESIGN, PROVIDE A RANGE OF HOME-BASED PLAY AREAS FOR CHILDREN. (SEE NEIGHBORHOOD-BASED PLAY AND HOME-BASED ACTIVITY POCKETS BELOW FOR DESIGN DETAILS.)

SINCE HOME-BASED PLAY IS AN EMERGING TREND, STANDARDS MATCHING THOSE FOR OTHER TIERS IN THE PARK SYSTEM HAVEN'T BEEN ESTABLISHED. ONLY A FEW BITS OF INFORMATION FIT THE FORMAT THAT SERVES THE REST OF THE TIERS.

RECOMMENDED STANDARDS

TIER VII HOME-BASED PLAY

REFERENCE SOURCE	STANDARDS ACRES PER 1000	SERVICE RADIUS	RECOMMENDED SIZE	POPULATION SERVED
BERGSTON (1970)	—	*	—	—
POLLOWAY (1977)	—	*	—	—
COOPER MARCUS (1973)	—	*	—	—

NOTES:

* WITHIN SIGHT & VISIBILITY

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- Space for home-based recreation should be a required component of each housing package.
- Spaces immediately around buildings and especially near the prime entry should be viewed as usable play spaces and should be visible from either the major living space or the kitchen space.
- Sidewalks or bike-jogging paths should be included in each housing package for wheel-toy play close to home.
- It should be possible to casually supervise children playing elsewhere while an adult is working in the kitchen.
- A window over the sink or work counter should directly overlook the backyard, patio, or front door.
- Access to the dwelling should be safe and large enough, paved (and partially covered) and be suitable for play.
- Entrances and play areas on the south or southeast are preferred.
- Provide paths (preferably paved) from home areas to the next tier: playlots.
- Front yards should have some subdivision that defines a protected area for play (and partially screens its messiness from public view).

RELATED ITEMS	NEIGHBORHOOD-BASED PLAY HOME-BASED ACTIVITY POCKETS PLAY LOTS

209 LINKS: TIER VIII

ISSUE

OFTEN IT IS THE INBETWEEN SPACES, THE SPACES CONNECTING DESIGNATED PLAY AREAS, THAT CHILDREN USE THE MOST. IT IS IMPORTANT TO PLAN AND DESIGN THESE LINKS IN ORDER TO TIE TOGETHER AN OVERALL TIERED PLAY/PARK SYSTEM.

DEFINITION

Links are parks that are linear, not very wide, and connect other tiers or specific recreation activities with walks, paths, or open space.

JUSTIFICATION

Pleasure walking is the most popular general recreation activity, (
Links provide a structured way, especially in family-housing areas without sidewalks (most family-housing areas do not have sidewalks) for pleasure walking, jogging, biking, "nature" courses, and safe connections for children who move between the parks and use parks further away from home as they get older. The links also provide safe, traffic-free paths to school in family-housing areas and are consistent with the goals of the modified Radburn-type planning which typifies new construction for family-housing areas at most bases.

Links are important to the development of children because they provide literal and safe connections to the expanding sphere of their world. This has not been unnoticed by a variety of researchers. Clare Cooper cites over a dozen similar observations, including:

> *Children tend to play anywhere and everywhere and not just in designated play spaces. The whole site should be designed with this in mind. The total environment must be thought of as an environment primarily for children, but since adults (residents, management, staff) need some degree of predictability as to what will happen where, there needs to be some place-structuring of activities. It must be made clear to both adults and children that noisy activities happen in certain places, digging in other places,*

> *sitting quietly elsewhere, etc. Children need to know that in certain places--totlot-playground, basketball area--they have autonomy over a territory which is theirs. It is important to try and anticipate which spaces will be attractive to children and ensure that nuisance will not be caused through noise or intrusive prying.* (1975, p. 232)

The justification for links also comes from another concern--safety:

> *Families with children under about the age of 10 highly value a safe (i.e., accident free) residential environment. The exclusion of moving cars from the site seems to be one of the most crucial factors in residents' perceptions of a safe environment for children. Children tend to play on or near roads if they are the public areas nearest to home; often they are more popular play spaces than are gardens. Some Swedish research has indicated that until the eleventh or twelfth year various important sensory mechanisms (sight, hearing, ability to differentiate right from left, fast from slow, near from far) may not be fully developed; children are thus especially vulnerable in traffic situations (S. Sandels, "Small Children in Traffic," Stockholm, 1969). A British study showed a statistically significant difference in child accidents between two neighborhoods, one traffic-segregated and one not.* (Cooper, 1975, p. 220)

Finally, the simple reason of frequency of use and stimulating use becomes a justification for connected play experiences. Clare Cooper cites a half dozen studies which bring her to the conclusion that

> *The most frequent outdoor play activity of children is moving around the home neighborhood. Children like to be constantly on the move, by walking, running, cycling, roller skating, skateboarding, etc., and they are often careless about traffic and other*

> *pedestrians. The pathway system should be free from traffic and wide enough for children on bicycles as well as walking adults, and it should be made clear in the residents' manual that riding bikes is permissible. If children are forbidden to ride their bicycles on the pathway system, they will ride them anyway in more dangerous locations, such as parking lots and approach roads.* (1975, p. 233)

Existing standards for links or linear parks typically refer only to links between the largest units in the park system and are concerned primarily for conservation areas or for pleasure driving. Standards for these kinds of linear parks are "resource oriented." Typically they support hiking, camping, snowmobiling, and cross-country skiing. Many metropolitan areas, Milwaukee County for instance, have identified old creek and stream beds as fulfilling the natural resource stratas emphasized in Tiers I and II and have developed them as linear regional parks. This designation also protects the country from ill-fated construction and development in the flood plains that edge even the smallest streams.

These parks are also called "recreation corridors" and are defined:

> *as a publicly owned continuous linear expanse of land which is generally located within scenic areas or areas of natural, cultural, or historical interest and which provides opportunities for participation in trail-oriented outdoor recreation activities especially through the provision of trails designated for such activities as biking, hiking, horseback riding, nature study, and ski touring.* (Southeastern Wisconsin Regional Planning Commission, 1977, p. 290)

They are also called "environmental corridors" which have the following characteristics:

> *The primary environmental corridors are a composite of the best individual elements of the natural resource base including surface water, streams, and rivers and their associated floodlands and shorelands; woodlands, wetlands, and wildlife habitat; areas of groundwater discharge and recharge; organic soils, rugged terrain, and high relief topography; and significant geological formations and physiographic features. By protecting these elements of the natural resource base, flood damage can be reduced, soil erosion abated, water supplies protected, air cleansed, wildlife population enhanced, and continued opportunities provided for scientific, educational, and recreational pursuits.* (Southeastern Wisconsin Regional Planning Commission, 1977, p. 288)

Linking parks and parkways with usable green space is a typical feature of many of Frederick Law Olmsted's park designs. Boston's park system is perhaps the best-known park system with linear corridors.

Links at the other end of the size scale are typically found in better-planned unit developments. They are also a conceptual part of modified Radburn community planning. No category of standards exists at this level.

Linkages between Tiers VII, IV, and V are important because many small children are supervised by older siblings at various times (Central Mortgage and Housing Corporation, 1978; Department of the Environment of England, 1973).

MASTER PLANNING PATTERN

LINKS

PLAN AND DESIGN A SERIES OF LINKS BETWEEN OTHER MAJOR RECREATION SITES WHICH CAN DOUBLE-FUNCTION AS CIRCULATION ROUTES AND AS PLAY AREAS.

RECOMMENDED STANDARDS

TIER VIII LINKS		STANDARDS			
REFERENCE SOURCE		ACRES PER 1000	LINEAR MILES PER 1000	RECOMMENDED SIZE (AC/LIN.MI)	POPULATION SERVED
SEWRPC	RECREATION CORRIDOR	200 FT WIDE	.161		
"	JOGGING	12' WIDE		1.45	12,500
"	BIKING			1.45	6,250
"	NATURE TRAIL			.73	50,000
"	HORSEBACK RIDING			1.21	20,000
"	SKI TOURING/HIKING			.97	6,250
"	SNOWMOBILING			1.45	10,000

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- Provide some resource-oriented linear parks in conjunction with the development of Tier I and Tier II parks at the following ratios:
  - Develop parallel trail areas for a combination of trails supporting hiking, biking, horseback riding, ski touring, nature trails.
  - .5 miles/1000 people, 100-200 ft. wide, 1.5 -.2.0 acres/linear mile
  - 1.5 miles is the recommended minimum length
- Develop designated parallel trails for different activities. The following should not be mixed on the same trails:
  - hiking (includes potential duplicate use for ski touring, pleasure walking, and nature trails)
  - snowmobiling
  - horseback riding
- Provide activity-oriented linear parks between Tiers III, IV, V, VI, and VII.
  - Provide .3 - .5 linear miles of parks/ 1000 people. Park widths should be 50-200 feet and should have wider spots 9250 ft. for games, picnics, and narrow spots (50 ft.) for passing by and through areas.
- Link parks in the community with activities involving older children and parents with small children.

RELATED ITEMS NETWORK OF PLAY

PHYSICAL PLANNING DECISIONS

300

Having determined existing patterns of land use as regards children's outdoor recreation and play, the next planning step is to decide on particular types of play areas to be developed as part of a long-range master plan for a base, and where they are best located with respect to siting and children's needs. This section treats these subjects and, in particular, lays out a series of location criteria for the siting of the different types of play area facilities recommended.

Site design and development criteria for the specific design of each of these sites are covered in a later section as they basically pertain to design, not planning as this section addresses.

The topics included in this section are:

301 Establishing Need for Facility Types
302 Establishing Location for Facilities

301 ESTABLISHING NEED FOR FACILITY TYPES

ISSUE

IN ORDER TO PROVIDE A WIDE RANGE OF PLAY OPPORTUNITIES FOR ALL CHILDREN, THE PLANNER MUST IDENTIFY THE PLAY AND RECREATION NEEDS OF CHILDREN AND THE COMMUNITY.

DISCUSSION

In choosing types of play opportunities which are necessary in a community, several types of information and factors should be considered:

EXISTING PLAY OPPORTUNITIES

The types of play areas which exist in each catchment area should be surveyed, and distances to housing, schools, and other "child-places" noted.

EXISTING POPULATION DENSITIES

Consider the number of children living in a housing area, particularly the number of infants related to the number of toddlers/ preschoolers related to the number of school-age children. These ratios will affect which kinds of play areas may be appropriate in each area (i.e., an infant play yard is appropriate only where there are infants to use it).

POTENTIAL DEMAND

Population projections which may be available from schools or base planners particularly those which are divided by age groups will also be helpful in determining users which must be served.

COMMUNITY PREFERENCES

Attitudes, cultural biases, and hopes of parents and others in the community will influence how many children will actually use play areas.

The best method for discovering the attitudes, biases, and hopes are by involving parents, children, and other community members in the planning process (see 402 BROAD PARTICIPATION IN THE PLANNING PROCESS). This process has some other benefits: one is the possibility for creating community acceptance of more types of play. Using "Broad Participation" will, in fact, tend to create a receptive climate in the community. Adults who understand the values of adventure play for children will be much more tolerant of the initial "messiness" involved.

PATTERN

ESTABLISHING NEED FOR FACILITY TYPES

TO GAIN A CLEAR IDEA OF WHAT FACILITY TYPES ARE NEEDED, ESTABLISH AN INVENTORY PROCESS OF EXISTING AND MISSING OPPORTUNITIES AND FACILITIES FOR PLAY.

RECOMMENDATIONS

The planner should first become familiar with the introductory section of this document:

- THE NATURE OF PLAY
- TYPES OF PLAY AREAS AND THEIR LOCATIONS
- EMERGING TRENDS

Next, the planner has to establish the list of desired and required play types and areas. The planner can then proceed to inventory play opportunities which exist in each catchment area, those which are missing, and (among the missing) those which must be added to meet the needs of the present and projected future.

Note the following example of a preliminary survey sheet for identifying existing and missing opportunities and facilities for play.

SAMPLE PRELIMINARY SURVEY FOR
EACH CATCHMENT AREA

TYPES OF PLAY AREAS	Have	Don't Have	Accessible	Not Accessible	Capacity	Future Need
Traditional/Conventional						
Contemporary/Sculptural						
Children's Zoos						
Special Play/Learn Environments						
Do-It-Yourself Amusement Parks						
503 COMPREHENSIVE PLAYGROUNDS						
601 SHARED OPEN SPACE						
602 INFORMAL PAVED AREAS						
603 HOME-BASED ACTIVITY POCKETS						
604 OPEN GRASSY PLAY AREAS						
605 HARD SURFACE PLAYING AREAS						
606 ADVENTURE PLAY AREAS						
607 CREATIVE PLAY AREAS						
608 ENVIRONMENTAL YARDS						
609 CHILDREN'S GARDENS						
610 FENCED ANIMAL AREAS						
611 DESIGNATED PLAY STRUCTURES						
612 PLAY SPACES FOR INFANTS						
613 SKATEBOARDING RUNS						
614 RESIDUAL AREAS						

302 ESTABLISHING LOCATION FOR FACILITIES

ISSUE

SELECTION OF LOCATIONS FOR PLAY AREAS HAS TOO OFTEN BEEN BASED ON THE AVAILABILITY OF "LEFT-OVER" SITES WHICH ARE NOT USEFUL FOR OTHER PURPOSES, RATHER THAN ON A CAREFULLY CONSIDERED WEIGHING OF ALTERNATIVE SITES ON THE BASIS OF POSITIVE VALUES FOR PLAY. PLAY AREA LOCATIONS MUST BE CHOSEN AFTER A CAREFUL INVENTORY OF ALL POSSIBLE SITES AND BE EVALUATED IN TERMS OF ALL RELEVANT CRITERIA.

DISCUSSION

While some of the criteria for location selection are peculiar to a specific community and may emerge from intimate knowledge of a particular base, most criteria may be discussed in more general terms.[1] They include the following:

PROXIMITY TO OVERALL COMMUNITY CIRCULATION PATHS

Play areas which are located near major circulation routes will not only be more accessible to children, they will also facilitate adult informal supervision. Further, since children like to be "where the action is," these play areas are more likely to be used than those tucked away out of sight.

PROXIMITY TO HOUSING

Play areas for small children must be within sight of home both for parent and child comfort. Another value of close-to-home play is the strengthening of the use of play area as meeting place for parents and other community members.

Play areas for older children may need some noise buffers between play areas and housing. The activity range for older children is wider and thus play areas may be located farther from housing within the guidelines for distance established in 201 THE TIERED PARK SYSTEM.

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[1] For a more complete review, refer back to TYPES AND LOCATIONS OF PLAY AREAS

For all ages of children, a consideration of streets which intervene between housing and play spaces is important. Young children should not have to cross any streets to reach play areas.

PROXIMITY TO OTHER COMMUNITY AMENITIES

Since younger children often accompany adults and older children, it is important to locate some play opportunities close to adult gathering areas. Play areas which are "special" such as a children's museum or zoo may be more centrally located near shopping centers, schools, community center, library, etc., which will help to integrate children into the public life of the community.

PROXIMITY TO EXISTING PLAY AREAS AND RECREATIONAL OPPORTUNITIES

If networks of play and recreation are to be created base-wide (see 209 LINKS: TIER VII), existing areas must be linked with new facilities planned. A consideration of these links and how they may be achieved is appropriate in the process of choosing locations for the new play areas.

Further, in a network of play, a wide variety of play experiences must be available in each child-use geographic area. An analysis of what play opportunities exist within each housing radius (e.g., ½ mile) will help planners determine types of play needed in various general locations.

EXISTING VIRTUES OF THE SITE

Each site considered may have special inherent qualities which make it more or less appropriate for play area development. Criteria are included in the following patterns from the DESIGN RECOMMENDATIONS section and may help in rating desirable qualities which may or may not exist in specific sites:

504 FAVORABLE MICROCLIMATES
505 CONTROLLED ACCESS
506 VIEWS TO AND FROM PLAY AREAS
507 PROXIMITY OF PLAY AREAS
512 DEGREES OF SHELTER
718 IMAGEABILITY AND ORIENTATION
722 BARRIER-FREE ENVIRONMENT
805 PLANTING AND GROUNDSHAPING
807 APPROPRIATE UTILITIES
808 POSITIVE DRAINAGE

COMPATABILITY OF PLAY TYPE AND SURROUNDING AREAS

Some types of play areas (see TYPES AND LOCATIONS OF PLAY AREAS) will be incompatible with the surrounding community. For example, adventure play has special requirements for a high barrier around the site and a place for delivery of "junk" which may make it inappropriate on certain sites.

While developing location criteria, the type of play to be sited may add certain special requirements.

COST FACTORS

Some sites may be less costly to develop than others. Areas that have existing landforms and vegetation which can be used in planning a play area will be less costly than one requiring extensive grading and replanting.

MASTERPLANNING
PATTERN

ESTABLISHING LOCATIONS FOR FACILITIES

PLAY AREA LOCATIONS MUST BE CHOSEN AFTER A CAREFUL INVENTORY OF ALL POSSIBLE SITES AND BE EVALUATED IN TERMS OF ALL RELEVANT CRITERIA. THIS CRITERIA MUST BE GENERATED TO FIT EACH SITUATION AND MUST INCLUDE DESIRABLE PROXIMITIES, VIRTUES OF THE SITE, COMPATABILITY OF PLAY WITH EXISTING ENVIRONMENT, AND COST FACTORS.

RECOMMENDATIONS

The location-decision process should be preceeded by reading TYPES AND LOCATIONS OF PLAY, and should include the following:

- an inventory of possible sites
- specific criteria for selecting sites (including those just discussed)
- a method for evaluating sites by use of criteria

Note the following example of a worksheet which may be easily modified to suit specific base criteria. It is one suggested method for obtaining a useful evaluation of possible sites. The relative weighting given to each of the criteria may be a base-by-base decision.

EXAMPLE RATING SHEET

Proximity to circulation routes	Alternative Site A	Alternative Site B	Alternative Site C
Proximity to housing			
1. visual			
2. auditory			
Proximity to amenities			
1. shopping			
2. community center/ library			
3. schools			
4. child-support facility			
5. other			
Proximity to play/ recreation			
1. play areas			
2. school grounds			
3. parks/ball fields			
4. adult recreation			
- tennis			
- gymnasium			
- track			
- etc.			
504 FAVORABLE MICROCLIMATES			
505 CONTROLLED ACCESS			
506 VIEWS TO AND FROM PLAY AREAS			
507 PROXIMITY OF PLAY AREAS			
512 DEGREES OF SHELTER			
718 IMAGEABILITY AND ORIENTATION			
722 BARRIER-FREE ENVIRONMENT			
805 PLANTING AND GROUNDSHAPING			
807 APPROPRIATE UTILITIES			
808 POSITIVE DRAINAGE			

KEY

May use 1-5 rating, + o - , or subjective written analysis to fill in blanks.

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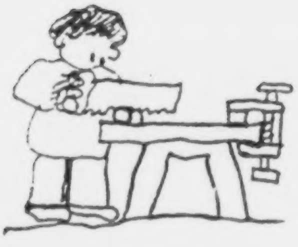
ARCHITECTURAL PROGRAM DEVELOPMENT PROCESS 400

Having completed a land use survey, and having decided on the types and locations for new or improved children's play areas, the next overall step in the planning and design process is to develop a facility program for each of the new or improved play areas to be developed during Phase I of a base's master plan. This section, therefore, tells the user of this document how to develop a specific facility program through an interaction of community input and use of the following design principles and patterns.

It is our firm belief that facility programs should not be developed either by rote use of the following design principles and patterns, nor by community expressions of needs in isolation of these principles and patterns. Rather, innovative and responsive programs will be developed through an interaction of these two sets of forces--community needs and more general child development considerations as articulated into architectural terms in the below principles and patterns.

The important steps in this program development process, then, are the following:

401 Establishing Approach and Developing a Program
402 Broad Participation in the Planning Process



401 ESTABLISHING AN APPROACH AND DEVELOPING A PROGRAM

ISSUE

A GOOD FACILITY PROGRAM FOR A PLAY AREA SHOULD BE GUIDED BY A STRONG AND COHERENT APPROACH WHICH WOULD GUIDE THE SELECTION OF DESIGN RESPONSES APPROPRIATE FOR THAT FACILITY.

PROCESS

SELECTING THE APPROPRIATE DESIGN PRINCIPLES AND PATTERNS

In using the enclosed matrix, there are three major approaches of selecting design principles and patterns which will guide the programming and design of any specific play area:

- selection by user groups and age group
- selection by developmental goals and objectives
- selection by types of play

SELECTION OF PRINCIPLES AND PATTERNS BY DEVELOPMENTAL OBJECTIVES

The most valuable way to select principles and patterns for a particular facility is to determine the most pressing developmental needs of children in the community in question, and then select those principles and patterns which are marked, indicating they will lead to those developmental objectives.

In this process, you can review the list of developmental goals, skills, and objectives, and select the ones which are appropriate for your situation. This approach assumes that you will be developing an architectural program based on a set of goals to be accomplished by children's play. The eventual selection of proper solutions will be dictated by these goals. These goals include the development of physical abilities, intellectual-perceptual abilities, and social abilities.

SELECTION BY USER GROUPS AND AGE GROUPS

A second way to select principles and patterns is to determine the demographic composition of children in an area to be served, and to insure that sufficient patterns have been selected that pertain to that group. If insufficient patterns have been selected, it may be necessary either to review developmental goals and to select additional patterns, or to select patterns directly related to the age group in question. An example would be if a community has a large number of infants or very young toddlers (6 weeks to 2-1/2 years)--such a situation may require a specially designed play area which will facilitate their developmental needs.

SELECTION BY TYPES OF PLAY

The third way to select principles and patterns is to choose those which will aid particular types of play found lacking in the current playgrounds in a community under study. Such a selection must follow a land use survey of the existing community and its play areas to determine what types of play are presently provided for, and what types of play are not adequately provided for by existing facilities.

A major finding from our site visits to military facilities around the country (see Travel Report, 1978) is that there are much better provisions for physical play (and thus for motor development) than there are for social and intellectual play (i.e., corresponding to social and cognitive-perceptual goals). Thus, most bases will wish to select those patterns and principles emphasizing social and intellectual play, though of course not neglecting physical play opportunities as well.

HOW TO USE THIS BOOK

The matrix with the information discussed above is located in the last section of this book. Simply open the fold out chart and use it as a reference guide to any appropriate design pattern and design principle.

A format for a program checklist is also enclosed. The purpose of the checklist is to:

1. Document your own set of design goals and the appropriate design principles
2. Monitor application of design principles

The filled checklist form is only the first stage in several cycles of the programming process. The input and participation of others (see 402 BROAD PARTICIPATION IN THE PLANNING PROCESS) is critical to the success of both the programming and the design processes. The filled checklist will serve, then, as an outline for the first of several iterations of the program, to be tuned-up by broad participation.

A CHECKLIST FOR PROGRAM DEVELOPMENT AND MONITORING

☐ Establish your set of goals/users/play types, or other items included in your approach. List them in the vertical column.

☐ Box the proper intersections. This is your preliminary program.

☐ Check each intersection as the applicable item is incorporated into the design.

SITE ORGANIZING PRINCIPLES
- 501 Neighborhood-Based Play
- 502 Network of Play
- 503 Comprehensive Playgrounds
- 504 Favorable Microclimates
- 505 Controlled Access
- 506 Views To and From Play Areas
- 507 Proximity of Play Areas
- 508 Separated But Linked Zones
- 509 Semi-Enclosed Play Spaces
- 510 Looped Circulation
- 511 Continuity and Branching
- 512 Degrees of Shelter

DESIGN OF ACTIVITY SPACES
- 601 Shared Open Space
- 602 Informal Paved Areas
- 603 Home-Based Activity Pockets
- 604 Open Grassy Play Areas
- 605 Hard-Surface Playing Areas
- 606 Adventure Play Areas
- 607 Creative Play Areas
- 608 Environmental Yards
- 609 Children's Gardens
- 610 Fenced Animal Areas
- 611 Designated Play Structures
- 612 Play Spaces for Infants
- 613 Skateboarding Runs
- 614 Residual Areas

GENERAL DESIGN OF PLAY SPACES
- 701 Ambiguous Settings and Objects
- 702 Loose Parts
- 703 Paced Alternatives
- 704 Challenging Environments
- 705 Nests for Quiet Play
- 706 Range of Social Scale
- 707 "Children Only"
- 708 Water Play Areas
- 709 Protected Sand/Dirt Play Areas
- 710 Play Above the Ground
- 711 Play Areas as Landmarks
- 712 Clear Accomplishment Points
- 713 Retreat and Breakaway Points
- 714 Variety of 3-D Spaces
- 715 Small Arts and Crafts Nooks
- 716 Stages and Props
- 717 Supervised Fire/Cooking Area
- 718 Imageability and Orientation
- 719 Orderliness and Consistency
- 720 Emotional Release Points
- 721 Repetition and Multiple Coding
- 722 Barrier-Free Environment

SITE DETAILS
- 801 Outdoor Storage
- 802 Berms as Play Equipment
- 803 Landscaped Barriers
- 804 Landscaping Materials
- 805 Planting and Ground Shaping
- 806 Snow and Ice
- 807 Appropriate Utilities
- 808 Positive Drainage

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402 BROAD PARTICIPATION IN THE PLANNING PROCESS

ISSUE

MANY DESIGNED ENVIRONMENTS FAIL OR ARE REJECTED BY USERS BECAUSE THEY DO NOT RESPOND TO ALL REAL NEEDS OR SEEM NOT TO BELONG TO THE COMMUNITY.

JUSTIFICATION

Recent trends in planning highly recommend resident and user participation in the planning process, especially in urban areas (Gold, 1968). Other critics of typical planning processes which exclude the prospective users of the planned space, have even suggested that the popularity of play areas is affected by user participation in planning as well as building. In fact, Frost and Strickland (1978) found that, given a choice between three school-yard play areas, two prebuilt and one kid and parent built, the latter was favored over the former.

There are several problems which arise if children are excluded from the planning process. One, adults have forgotten what children actually like and end up superimposing their distant memory of their own childhood onto their children's active and involved imagination. Clay argued that "to over-design with inflexible materials is to steal away from children (and adults) the right and delight and developmental value of creating for themselves," (Clay, 1972, p. 39).

Clay went on to argue that the consequence of not allowing for the type of play children like eventually depresses the spirit of the child:

> *As kids are more and more excluded from adult work, imprisoned in apartment towers, fenced in by dangerous traffic, forced to live where digging and building are outlawed, a small person must feel he or she is a perpetual underdog in uncontrollable surroundings. To roam safely, to fantasize; build with tools and materials, care for pets, and share (perhaps with his parents, too) creative work-play, would bring the child, as Karl Linn says, "a sense of mastery over the place he inhabits."* (p.39)

Other recommendations have touched on similar issues:

1. *Initial adoption of most innovations comes about when a small number of convinced people persuade others to attempt an idea on an experimental basis. (In the case of St. Peter's playground, construction of one model stimulated all the others.)*

2. *A broad range of people with varying interests and attitudes exists in every school district, and they will participate in a project that is consistent with their beliefs.*

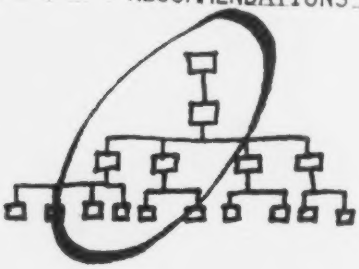
3. *No community exists without communication. General policies and procedures must be well prepared to made progress easier, but they must not be so restrictive as to stifle local decision-making.*

MASTERPLANNING PRINCIPLE

BROAD PARTICIPATION IN THE PLANNING PROCESS

BROAD PARTICIPATION FROM PARENTS, CHILDREN, MANAGEMENT, AND PLANNERS WILL FACILITATE THE DESIGN PROCESS AND WILL RESULT IN A PLAY AREA THAT BETTER MEETS THE NEEDS OF THE USERS, THUS MAKING IT MORE POPULAR AND MORE USED.

RECOMMENDATIONS



- The planning team for masterplanning should include the following:
  - special representatives designated by the base commander
  - office of the base master planner
  - designated "advocate for play"
  - office of "family life"
  - family-housing area representative representing a) children group, and b) parents group
- The designated advocate for play should be responsible for the quality and extent of community participation.

DESIGN PATTERNS AND RECOMMENDATIONS

SITE ORGANIZING PRINCIPLES

500

This section includes design principles which are applicable to the entire site of any play area. Unlike the specific design details, these principles deal with larger design issues which should be addressed early in the design process. They include traditional siting, site design, and site development concepts as they are applicable to the needs of children. The overall organization of a play space will be decided through a combination of these principles and the guidelines for different types of play spaces in the next section.

These principles are:

501 Neighborhood-Based Play
502 Network of Play
503 Comprehensive Playgrounds
504 Favorable Microclimates
505 Controlled Access
506 Views To and From Play Areas
507 Proximity of Play Areas
508 Separated But Linked Zones
509 Semi-Enclosed Play Spaces
510 Looped Circulation
511 Continuity and Branching
512 Degrees of Shelter

501 NEIGHBORHOOD-BASED PLAY

ISSUE

ONLY PART OF CHILDREN'S PLAY ACTIVITIES TAKE PLACE IN DESIGNATED PLAY AREAS. THE ENTIRE NEIGHBORHOOD AREA IS A SETTING FOR PLAY EVEN WHEN WELL-DESIGNED AND WELL-EQUIPPED PLAY AREAS EXIST IN THE SAME NEIGHBORHOOD.

JUSTIFICATION

There are three important and well-confirmed findings which indicate the importance of neighborhood-based play:

1. Children, especially in the 5 to 10 year range, are the greatest users of public outdoor space (Cooper, 1975).
2. Children tend to play anywhere and everywhere, and not just in designated play spaces. They use the whole neighborhood site for their play activities.
3. The most frequent play activity of children is moving around the home environment. They are constantly on the move, transiting between activities and involved in little activities along the way.

In a study of nine London housing areas, Vere Hole (1966) found that the most dominant child activities were sitting, standing, lying, and walking around the site (43% of all observed activities). This finding contrasted sharply with the very little use of designated play equipment (12%), and ball games (2%). Observational research by the Department of the Environment of England (1973) on another 12 housing areas again demonstrated that children spend a vast majority of their play time in places other than designated play areas. The most popular places to play were streets and other paved areas. The findings are identical in this country. In a housing study in San Francisco, Cooper (1974) found that only 15% of the children's outdoor activities occurred on designated play areas, while 62% occurred on undesignated paved and grassy areas. Paved areas were especially popular, with 44% of activities occurring there relative to only 20% of the site being paved.

TYPES OF PLAY / PHYSICAL SETTINGS	Front Stoop	Driveway	Front Yard	Back Yard	Street	Public Sidewalk	Cul De Sac	Community Center	Open Field	Central Play Ground
Random Play			●					○		
General Play			●						○	○
Biking	○		○	○	●			○		○
Non-Active	●	○			○			○	○	○
Walking	○	○				●	○	○		○
Basketball	○	○	○	●		○	○		○	○
Ball Play	○	○			●			○		
Object Play			●		○				○	
Skating	○		○	○	●		○	○	○	○
Active Play	○							●		

KEY: ● Indicates highest number of observed activity
○ Indicates lowest number of observed activity

PHYSICAL ELEMENTS AND ACTIVITY TYPES IN APOLLO HEIGHTS

(from Hester, 1975)

With regard to the predominance of children as users of public outdoor spaces, one study found that in the late-afternoon hours, 5½ times more children than adults were observed over an entire summer of weekends (Cooper, personal communication). Our own research in Milwaukee substantiates this finding--on some streets the children are so numerous and their activities so rapid that even counting them is next to impossible.

Our own site research (Travel Report, 1978) confirmed these findings for military bases also. As we stated in the earlier report:

> *By far the majority of younger children we saw outdoors were in the front yards, near the streets, or on house steps and porches. Relatively very few were seen in the designated play areas behind the housing, except when they were a captive audience at the Child Care Center.*
>
> *For example, children were observed quietly floating boats and watching their reflections in pools of standing water, while others were*

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> *playing quietly in the grass and soil under large trees. Meanwhile, no children were playing on the nearby metal play equipment.*
>
> *Generally, more children were seen playing with features of the natural environment, and in front of the dwelling units, than on designated playgrounds or playing fields.* (p. 29)

The theme of the 1978 Seventh World Congress of the International Playground Association was "Play in Home Settlements." The major emphasis and recognition of this Congress was the global importance of the home and neighborhood environment for children's play, relative to designated playgrounds.

PRINCIPLE NEIGHBORHOOD-BASED PLAY

DESIGN ALL NEIGHBORHOOD SPACES INCLUDING SPACES IN AND AROUND HOUSING, STREETS, BACKYARDS, SHARED OPEN SPACES, ETC., WITH THE PLAY NEEDS OF CHILDREN IN MIND. NEW HOUSING SHOULD BE DESIGNED TO ACCOMMODATE CHILDREN'S PLAY ACTIVITIES. RENOVATIONS AND ADDITIONS TO HOUSING AND ADDITIONS TO LANDSCAPING CAN ALSO BE MADE.

RECOMMENDATIONS

> *The total environment must be thought of as an environment primarily for children, but since adults (residents, management, staff) need some degree of predictability as to what will happen where, there needs to be some place-structuring of activities. It must be made clear to both adults and children that noisy activities happen in certain places, digging in other places, sitting quietly elsewhere, etc. Children need to know that in certain places . . . they have autonomy over a territory which is theirs. It is important to try and anticipate which spaces will be attractive to children and ensure that nuisance will not be caused through noise or intrusive prying.* (Cooper, 1975, p. 232)

RELATED ITEMS

NETWORK OF PLAY
SHARED OPEN SPACES
INFORMAL PAVED AREAS
HOME-BASED ACTIVITY POCKETS
OPEN GRASSY PLAY AREAS
HARD-SURFACE PLAYING AREAS

502 NETWORK OF PLAY

ISSUE

INFORMAL, NEIGHBORHOOD CONTACT WITH MANY CHILDREN IS A VITAL LIFE EXPERIENCE. CHILDREN ALSO NEED A LARGE VARIETY OF EASILY-ACCESSIBLE ACTIVITIES WHICH ARE APPROPRIATE TO VARIOUS AGES, DEVELOPMENTAL LEVELS, AND INTERESTS. NO SINGLE DESIGNATED PLAYGROUND--NO MATTER HOW ELABORATE--CAN PROVIDE FOR ALL THESE NEEDS.

JUSTIFICATION

In her research, Clare Cooper (1974) found that:

> *Children perfer to play and move around in an environment that is varied and full of surprises. Children need choice and variety to keep their interest since they rarely are engaged for long in one activity.* (p. 375)

Children of different ages (and developmental levels) need very different play experiences. (Schneekloth, Blakely, Boyd and Burke, 1977). Variety for developmental levels, interests, and choices must be provided.

Alexander, Ishikawa, and Silverstein (1977) argue from the standpoint of healthy psychological development, that a wide circle of friends is necessary, and that homes and play areas should be connected to provide sufficient numbers of age mates.

Location is a very important factor in use patterns. Play areas which are hard to get to (unconnected with usual routes, e.g., home to school) are less likely to be used. Play areas which are out of the mainstream--unlinked to other activity areas--are also more likely to remain empty (Bengtsson, 1974).

Therefore, a variety of play activities must be linked with home, other activity areas, normal child routes, and with each other.

> *Children and young people of all ages--like adults--should be able to "go shopping" for their play. They need a great variety of activities. The essence of our provision for them must be to give them freedom to choose.* (Lady Allen, 1968, p. 17)

PRINCIPLE

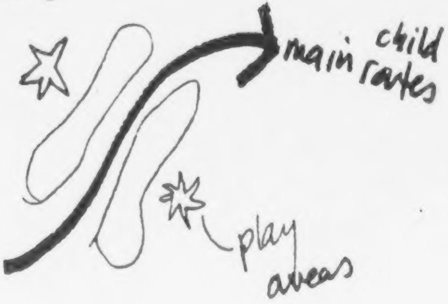
NETWORK OF PLAY

DEVELOP A RANGE OF PLAY ACTIVITIES WHICH ARE LINKED WITH EACH OTHER, WITH HOUSING, WITH OTHER ACTIVITY AREAS, AND WITH CHILD ROUTES. ASSURE A WIDE CHOICE OF PLAY OPTIONS WITHIN EACH CHILD'S HOME RANGE.

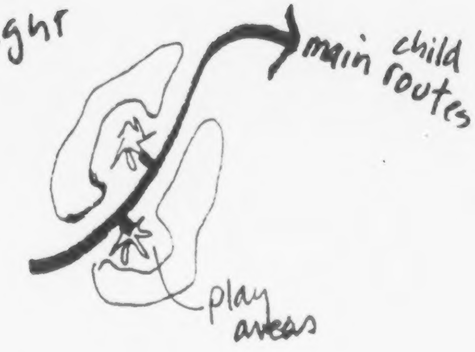
RECOMMENDATIONS

- Plan for play in the earliest stages of community development. Integrate play with housing and with other high-use community activity areas.
- Identify existing patterns of child tracks (through remnants of use and unobtrusive observation), identify nodes of children's activity, and plan play areas and connecting links between the nodes and along the tracks.
- Plan a radiating network with youngest-child spaces closest to home, and increasingly wide range of play areas radiating from these. As children are ready to move out to other types of play, they can choose from several options.
- Assure that each individual play area includes as many play activities as possible.
- Plan child areas in conjunction with each other with very evident links (e.g., bicycle paths, pedestrian paths, etc.--see PLAY LINKS) which will help lead children from one to the next.
- As new play areas are added to existing communities, avoid duplicating existing play opportunities in the same general area. Add different activities whenever possible.

wrong



right



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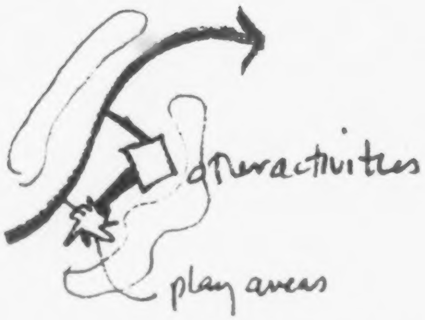


RELATED ITEMS

NEIGHBORHOOD-BASED PLAY
COMPREHENSIVE PLAYGROUNDS
HOME-BASED ACTIVITY POCKETS
INFORMAL PAVED AREAS

503 COMPREHENSIVE PLAYGROUNDS

ISSUE

THOUGH CHILDREN'S ATTENTION SPAN IS MUCH LONGER THAN ADULTS OFTEN GIVE THEM CREDIT FOR, THEIR INTERESTS DO WANDER IF ONLY ONE PLAY OPPORTUNITY IS PROVIDED.

JUSTIFICATION

As stated in NETWORK OF PLAY, children spend relatively little time in any one activity. Subsequently, the greater the variety of activities provided for in a neighborhood play area, the longer it will hold their attention.

Further, children of different developmental levels require different types of play experiences. Yet, opportunities need to be provided for children to interact with other children of different ages. Similarly, there are too few opportunities for children to interact with adults in a spontaneous situation. Play areas which appeal to children of different ages, and which appeal to adults as well as to children, can begin to bring the ages together and to enrich cross-generational contacts.

An important part of a play area for children is its role as a meeting place, a place where children may go to see what's happening, to meet friends, or to just hang around until there is something better to do (see PLAY AREAS AS CHILDREN'S LANDMARKS.) The more variety there is in play opportunities, the more a play area will appeal to children for these purposes.

With regard to the different types of activities to be planned and designed for, schools and child-care centers often request opportunities for a balance between structured activities (like kickball) and unstructured activities (like fantasy games).

A new and exciting response to these needs is the COMPREHENSIVE PLAYGROUND, also called a Play Park, which is an active and comparatively new type of park which is best known in the Scandinavian countries and Switzerland (see Bengtsson, 1970; Ledermann & Traschel, 1968). In essence, a COMPREHENSIVE PLAYGROUND is a centralized, aggregated, spatially-interconnected set of play spaces. It is analogous to a NETWORK OF PLAY, which is a decentralized, disaggregated, linearly-linked series of play experiences.

Arvid Bengtsson is a famous Swedish planner and landscape architect who has written extensively and engagingly about COMPREHENSIVE PLAYGROUNDS. He says:

> *The Comprehensive Playground or play park . . . should contain layouts for different age groups, i.e., not only for children and adults, but for the age groups in between for which we often fail to provide in traditional parks. In such a play park, tennis courts and courts for other ball games--they could be of the simplest kind--are just as essential as swings and sandpits; and resting places for the aged are no less important than layouts for active pursuits.* (Bengtsson, 1970, p. 110)

PRINCIPLE

COMPREHENSIVE PLAYGROUNDS

IN THE CONTEXT OF AN OVERALL MASTER PLAN FOR NEIGHBORHOOD-BASED PLAY, CREATE BOTH NETWORKS OF PLAY AS NODES OF HIGH ACTIVITY, AND CREATE COMPREHENSIVE PLAYGROUNDS AS SUPER-NODES OF INTEGRATIVE ACTIVITY APPEALING TO ADULTS AND CHILDREN ALIKE. THE COMPREHENSIVE PLAYGROUND IS A LOCAL AMENITY WHICH SHOULD ACT AS THE CENTER OF A NEIGHBORHOOD.

RECOMMENDATIONS

- The site of a comprehensive playground is normally based on a population of between 3,000 and 5,000.
- Investigations carried out in Stockholm have shown that the walking distance from a COMPREHENSIVE PLAYGROUND to home should not exceed 400 meters (440 yards) (Bengtsson, 1970). Factors which influence the size of the catchment area include, however, the topography of the landscape and a convenient link with other children's activity areas (schools, recreation centers, and shops).

- Recommended size is approximately 15,000 square meters (about 4 acres) (Bengtsson, 1970). With larger sizes, the chance of giving the layout a more park-like character increases because grass areas must be relatively large in order to resist wear. If size is restricted, relatively more hard surfaces should be planned.

- As it is essential to have short walking distances to the playground and a central position, economizing on space and trying to get as much as possible into the restricted area is often necessary.

- Create opportunities for structured play and unstructured play, for active pursuits, social interaction and quiet pursuits, and zone appropriately (see SEPARATE BUT LINKED ZONES; LOOPED CIRCULATION; OPEN GRASSY PLAY AREAS; NESTS FOR QUIET PLAY).

- Create opportunities for all age groups (see "CHILDREN ONLY" AND MULTIPLE AGE GROUP PLAY TERRITORIES)

- Create a series of "rooms" defined by boards, hedges, or berms. Each section should be conceived of in terms of a different type of activity, while at the same time retaining within the framework of the "room" the greatest possible flexibility. The aim is to create a rich variety of environments from which to choose (NETWORK OF PLAY), while zoning them such that highly active activities don't interfere with more quiet activities (see SEPARATED BUT LINKED ZONES).

- A meeting place should be strategically positioned at the center of events.

RELATED ITEMS	NEIGHBORHOOD-BASED PLAY NETWORK OF PLAY SEPARATE BUT LINKED ZONES LOOPED CIRCULATION OPEN GRASSY PLAY FIELDS NESTS FOR QUIET PLAY "CHILDREN ONLY" AND MULTIPLE AGE GROUP PLAY TERRITORIES PLAY AREAS AS LANDMARKS

504 FAVORABLE MICROCLIMATES

ISSUE

PLANNING OF PLAY AREAS SHOULD INCLUDE THE YEAR-ROUND USE OF SUCH AREAS.

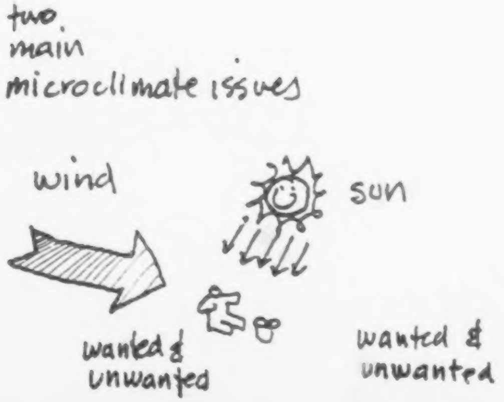
JUSTIFICATION

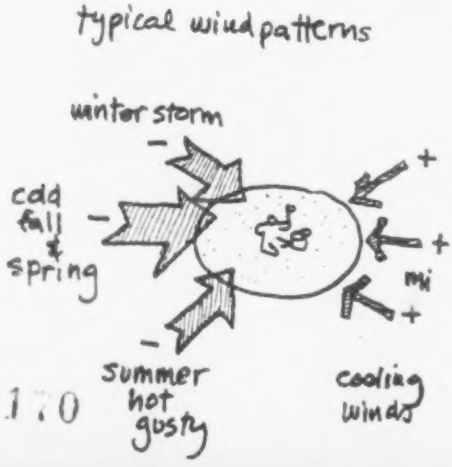
In choosing play area locations, climate must be considered. The creation of favorable microclimates will have a positive influence on the amount of play areas.

Rutledge (1971) has made the following list of some of the climatic factors to be considered:

- temperature (air and water), especially day, night, and seasonal norms, extremes, and their durations
- Sun angles at various seasons and times of day.
- Predictable wind directions and intensities as they occur daily and seasonally.
- Precipitation: rain, snow, and sleet seasons and accumulations; storm frequencies and intensities.

Microclimates are places which deviate from the general climate on a regular basis-- they can vary by being colder or warmer. In winter we seek warmer microclimates: the south-side, protected terrace of a ski lodge. In summer we seek cooler microclimates: a shaded and cool picnic area on the north side of a hill. Microclimates can be a few hundred square feet in size, or they can be whole neighborhoods or even protected mountain valleys.

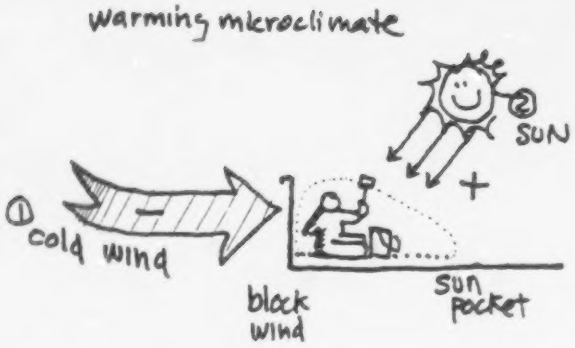

two main microclimate issues
wind
sun
wanted & unwanted
wanted & unwanted

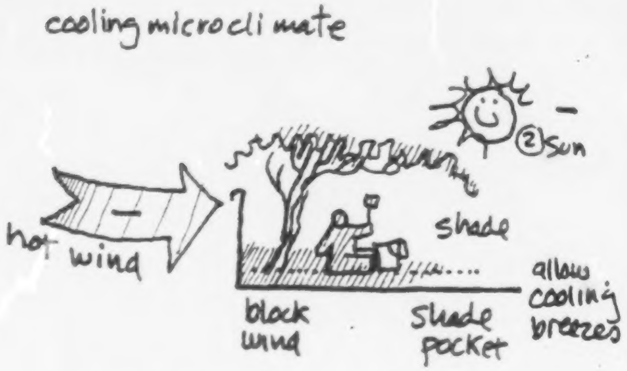

typical wind patterns
winter storm
−
cold fall & spring
−
−
summer hot gusty
+
+
mi
+
cooling winds

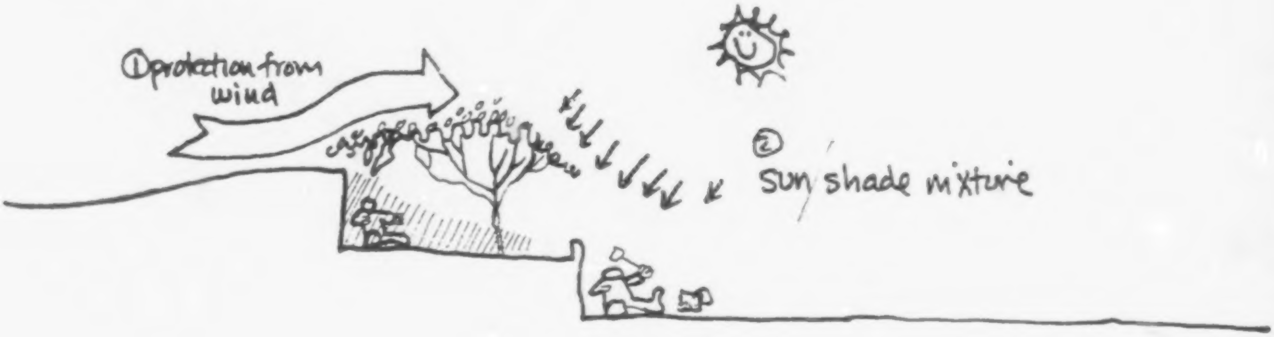
The two main factors which must be designed for are wind and sun. In a microclimate which is warmer than the surrounding areas, prevailing cold winds are blocked and the sun is captured in a sun pocket.

In a microclimate which is cooler than the surrounding areas, hot gusty winds are blocked and (if possible) cooling breezes are admitted and the area is shaded from the sun.

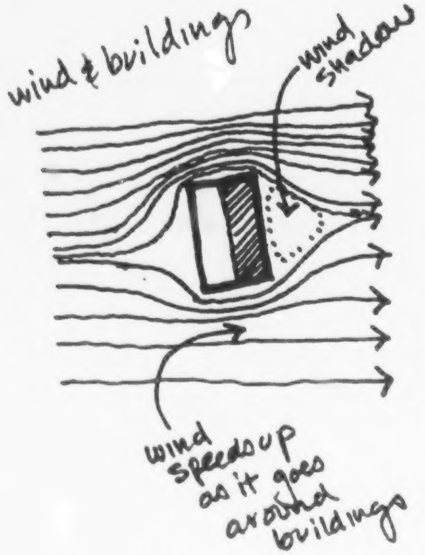
Areas such as these can be natural as well as designed; sun pockets can be found in warm meadows in a forest; frost pockets can be found in low places which are protected from the warm winds which melt higher surrounding areas.


warming microclimate
② SUN
+
①
cold wind
–
block wind
sun pocket


cooling microclimate
–
② sun
–
hot wind
shade
allow cooling breezes
block wind
shade pocket


① protection from wind
② sun shade mixture

As mentioned before, the two most critical factors in creating a pleasant microclimate are wind protection and sun-shade mixture.

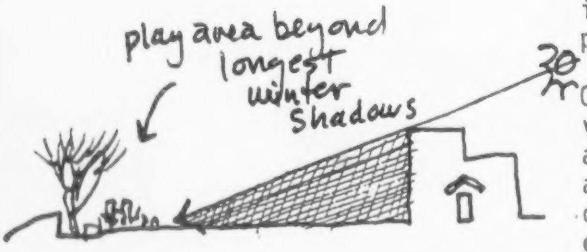


> *Children may not always be conscious of the reason why they sometimes find it unpleasant outside and prefer to stay at home, but we know from investigations carried out that wind has a very great influence on this, expecially if combined with low temperatures.* (Bengtsson, 1974, p. 37)

Since wind problems may be exaggerated rather than relieved by existing buildings, this is an especially tricky problem.

Sun-shade mixture must be considered from several standpoints. (The requirements for sunshine will change with latitude, season and climatic zone.) In warm climates, shade is obviously necessary as protection from too-strong sunlight. Further, asphalt, concrete, and sand areas must have at least partial shade to be bearable in hot weather.

In colder climates a sun-shade mixture in summer with full sun in winter is desirable. In Alexander, Ishikawa, and Silverstein (1977), evidence is cited showing that people in general avoid using areas on the north sides of buildings. Shadows from existing buildings should be plotted at their worst (Dec. 21 in the northern hemisphere) and play areas placed outside these shadows.



Other microclimate considerations include vegetation and open water. Vegetation can affect wind patterns on a site and will also affect sun-shade balance. Further vegetation can provide significant cooling through evaporation.

Open water will also cool through evaporation and radiation in summer, and can, if large enough, warm the air in winter.

PRINCIPLE

FAVORABLE MICROCLIMATES

CREATE FAVORABLE MICROCLIMATES WHEREVER A CHILDREN'S PLAY AREA IS INTENDED. PROTECT THE AREA FROM PREVAILING WINTER WINDS AND FROM FROM THE EXTREME SUMMER SUNS, WHILE ALLOWING WINTER SUN TO PENETRATE.

RECOMMENDATIONS

- In site selection, identify positive microclimates: study wind directions, sun angles, and shade conditions year round.
- Do not site play areas where buildings will shade them at any season of the year.
- Evaluate varied topography and existing vegetation as possible microclimate assets when choosing sites.
- Funnel and direct cooling summer breezes.
- Design for the dominant negative wind pattern (hot or cold).
- Create play areas with sun pockets and shady areas in both cold and hot climates.
- In temperate and cold climates use deciduous trees to provide shade so they won't block sun in winter and early spring.
- Provide good drainage after precipitation in order to make the play area more usable.
- Use earthforms, dense evergreens, and existing buildings as windbreaks on the side of the play area facing prevailing negative winds (hot, gusty, or cold).
- Place surfacing materials so that heat collectors (asphalt, sand, concrete, etc.) will not be in direct mid-day sun in hot weather.

505 CONTROLLED ACCESS

ISSUE

ACCESS TO PLAY AREAS CAN BE DANGEROUS IF IT CROSSES MAJOR VEHICULAR CIRCULATION OR IS INTERFERED WITH BY MAINTENANCE AND DELIVERY EQUIPMENT.

JUSTIFICATION

Play spaces should be located so that preschool children do not need to cross a street to play at their local playground. In the case of school-age children, the need to cross vehicular traffic to get to the playground should be minimized. Children should be able to identify the entrance easily and should be able to enter without difficulty.

Another access problem is maintenance and delivery. Maintenance equipment (including snow removal vehicles where appropriate) must be able to get to and from (and around and within) the playspace easily (Bengtsson, 1970).

An access issue special to adventure playgrounds is that delivery vehicles must be able to bring in materials for kids' use (American Adventure Playground Association, n.d.).

In our earlier research, two facilities were identified which had excellent access conditions:

- Irvine Adventure Playground

  The site is a very strong feature of the the Irvine Adventure Playground, and sets it apart from other adventure playgrounds in the country. No major thoroughfares have to be crossed for most children to reach it (radius - ca. 1 mile). (Travel Report, 1978, p. 130).

- St. Francis Square

  Defensible territory created by narrow openings from the street, grade changes from the street, and eyes on the interior open space.

  Variety of settings and landscape elements in the courtyards. The courts are rich in variety, while the peripheral parking lots and sidewalks are flat featureless asphalt

> *surfaces generally barren of interest for children. Other studies have shown that variety and duration of children's focused play is related to to the variety of settings and landscape elements available--spaces, grade changes, plant materials, surface types, and site furniture.* (Travel Report, 1978, pp. 152, 155)

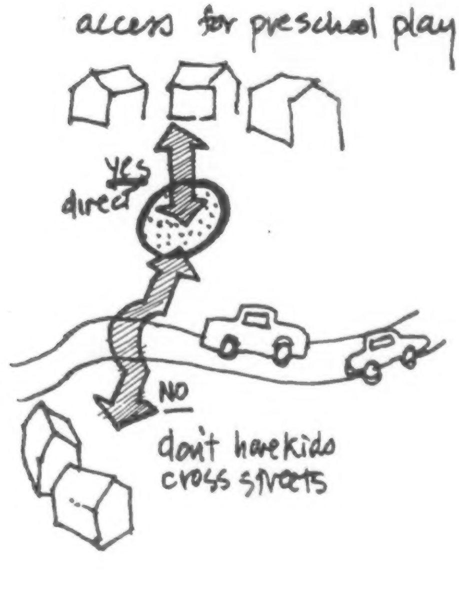
PRINCIPLE

CONTROLLED ACCESS

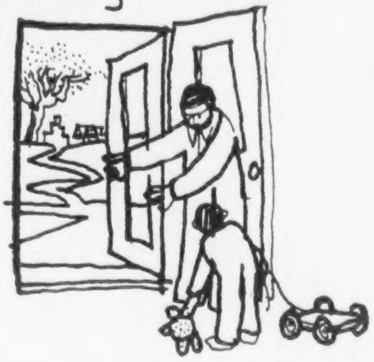
ACCESS POINTS TO ANY PLAY SPACE SHOULD BE LIMITED, DELINIATED, AND CONTROLLED. PLAN ACCESS POINTS IN THE MOST PROTECTED AREAS (NEAR HOUSING, FAR FROM STREETS) SO THAT CHILDREN DO NOT HAVE TO CROSS STREETS. ACCESS FOR VEHICLES SHOULD NOT INTERFERE WITH CHILD ACCESS.

RECOMMENDATIONS

- Locate preschool play areas so children can reach them without crossing streets. Access should be nearest housing.

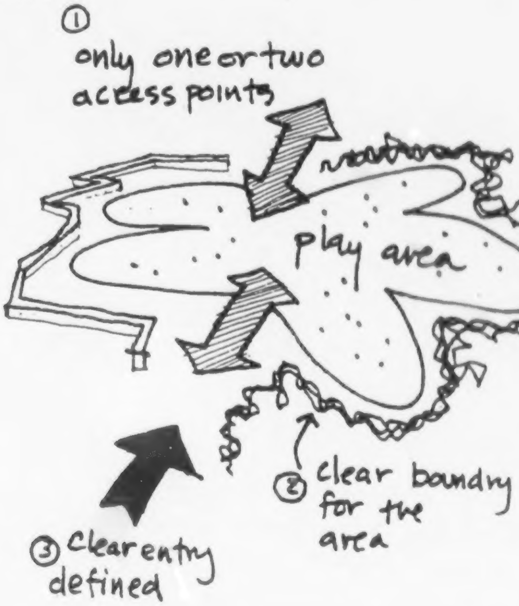


clear access points from housing



- Place access points where children can see them clearly from housing or from adult/older child activity areas.

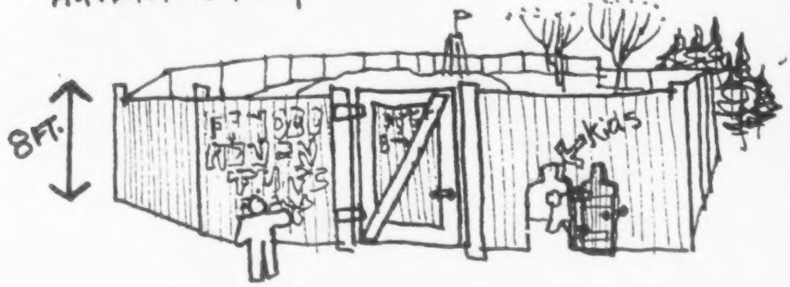
- Provide only one or two access points with no through traffic path; enclose the rest of the perimeter with some type of barrier.


① only one or two access points
play area
② clear boundry for the area
③ Clear entry defined

- Use fence materials, landscaping, plantings, earth berms, or some other method to enclose the play area and controll access to and egress from play areas.

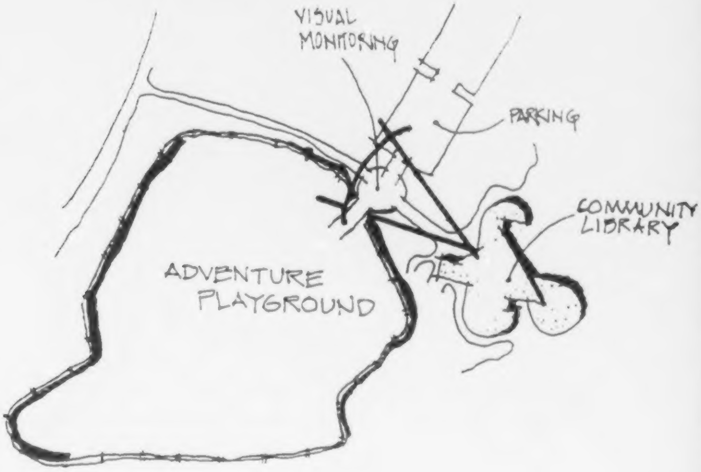
- Adventure play areas must be surrounded by a solid fence with two access points-- one for people and one for delivery vehicles.

sturdy secure fences for ADVENTURE PLAY

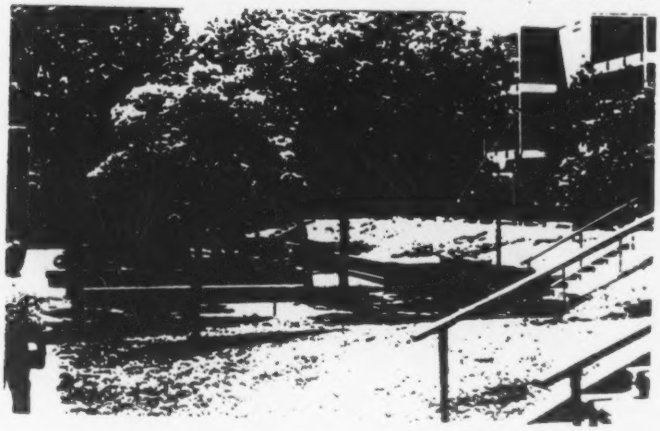


- Maintenance equipment should be able to enter the play area and move as necessary within it easily. Access for equipment should not interfere with child access.

Irvine Community Park and Adventure Playground
Irvine, California


VISUAL MONITORING
PARKING
COMMUNITY LIBRARY
ADVENTURE PLAYGROUND

St. Francis Square, San Francisco, California



RELATED ITEMS
VIEWS TO AND FROM HOUSING
SEMI-ENCLOSED PLAYSPACES FOR YOUNG CHILDREN
ADVENTURE PLAY AREAS
LANDSCAPED BARRIERS

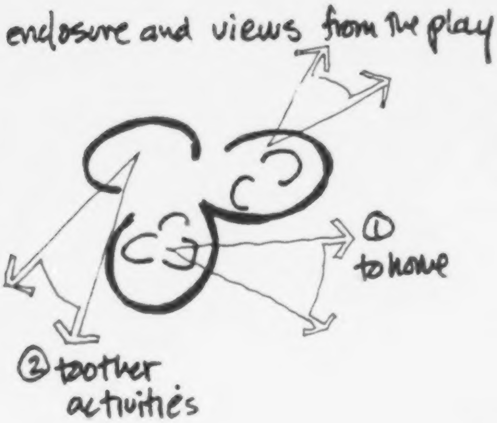
506 VIEWS TO AND FROM PLAY AREAS

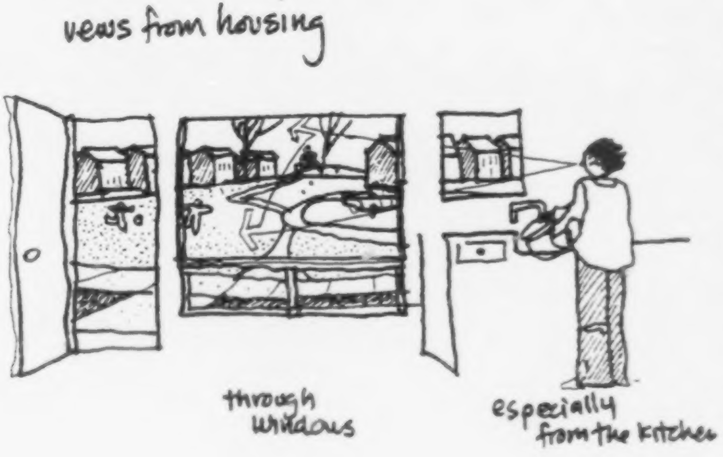
ISSUE

FOR THE PARENTS' SENSE OF PSYCHOLOGICAL SECURITY, YOUNG CHILDREN NEED TO BE SEEN WHEN OUT OF DOORS. TODDLERS AND YOUNG PRESCHOOLERS EVEN MORE SO, NEED TO FEEL THAT THEIR PARENTS ARE WITHIN SHOUTING DISTANCE IF THE NEED ARISES.

JUSTIFICATION

Children need to feel enclosed, private, and secure in a play space (see SEMI-ENCLOSED PLAY SPACES FOR YOUNG CHILDREN). But small children also want to be able to see "home" from the playspace (Pollowy, 1977). Cooper (1975) found that parents want to be able to see their small children in the playspace, preferably from windows in the dwelling. If parents have a view from kitchen to playspace, this is most desirable.

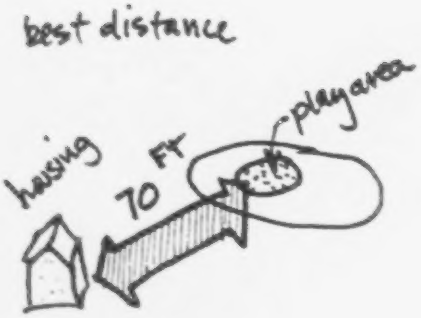

enclosure and views from the play
① to home
② to other activities


views from housing
through windows
especially from the kitchen

A study by Holme and Massie (1970) showed that play areas within sight and sound of home are actually used by such a high percentage of children as to actually make such locations mandatory for small children's play areas.

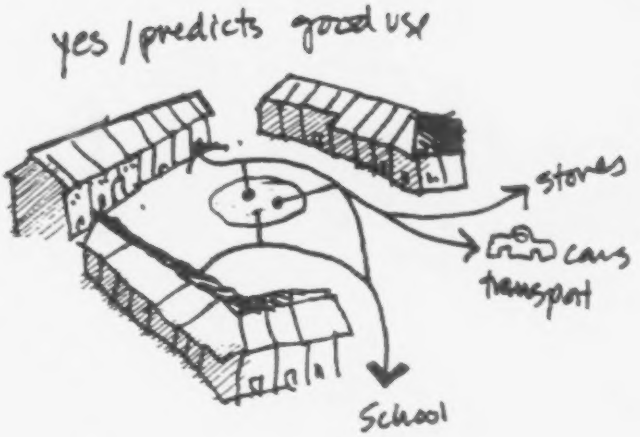
Clare Cooper(1975) points out from her research the following:

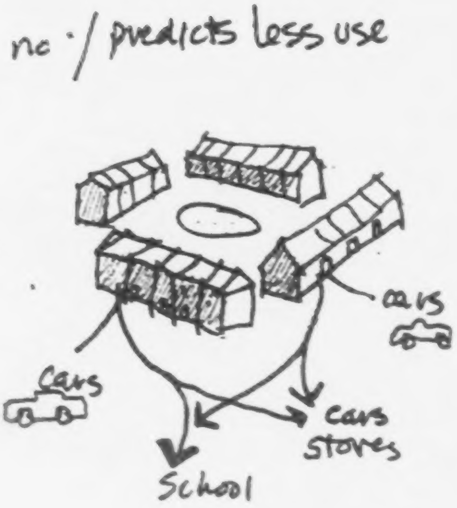
> *Children in the active-group-play age range (c. 5-10) prefer to play in moderately sized, spatially enclosed outdoor areas, and supervising adults like to be able to oversee the whole of such an area from some place in the dwelling.*
>
> *The maximum distance for recognizing and hailing someone is c. 70 feet; therefore the maximum dimension of the common open space should approximate this. Supervision by adults is facilitated if the space is roughly square or rectangular in shape; irregular shapes, fragmented open space, or multiple exits makes supervision difficult. For purposes of children's safety, it is preferable that the open space be directly accessible from the dwelling; it is generally unsatisfactory if the communal space is separated from the dwellings it serves by access roads or parking facilities.* (p.



Views and the general coming and going of adults and kids to the housing affects the use of play space. Hidden play areas aren't used as much as those which are "a part of the action" and life of a community. Cooper found this to be true both in her own research and in the research of others. She recommends:

> *A variety of orientations should be provided, since people vary in their need for local contacts. For example, dwellings facing onto a street may experience less neighboring than those facing onto a shared pedestrian-oriented facility. The more traffic there is on the street, the less the degree of neighboring and sense of community on the block.* (p.


yes / predicts good use
stores
cars
transport
School


no / predicts less use
cars
cars
cars
stores
School

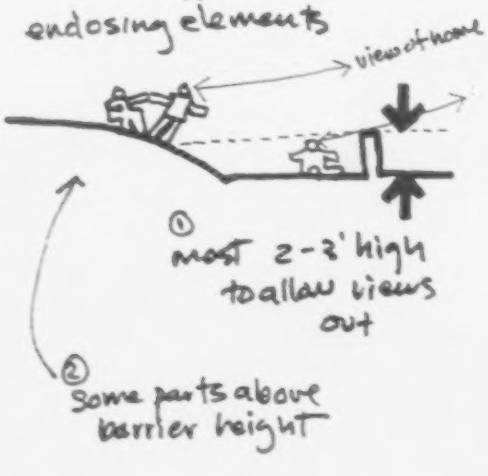
PATTERN

VIEWS TO AND FROM PLAY AREAS

PLAY AREAS SHOULD BE PLACED TO MAXIMIZE VIEWS BETWEEN THEM AND SURROUNDING HOUSING. PLAY AREAS FOR YOUNG PRESCHOOLERS SHOULD BE WITHIN 70 FEET OF THE CHILD'S FRONT DOOR.

RECOMMENDATIONS

- Enclosures should be child scale (2-3 ft.) to allow parents to see into the playspace, and to allow the child to feel private and safe, but not lost.
- Some parts of the play area should be raised above barrier height (e.g., mounds, climbing apparatus, etc.) to allow children a view of home.
- No high, continuous, opaque barriers should be placed between housing and play area which would block sightlines between them.
- Designers should consider placing larger structures, etc., at the edge of the playspace furthest from housing.
- When planning and designing housing, evidence from around the world indicates that where children are to live, and be allowed by parents to use the public out-of-doors, no housing should be above three stories, and there should be walk- ups with direct visual and circulation access to adjacent play areas.


enclosing elements
view of home
① most 2-3' high to allow views out
② some parts above barrier height

RELATED ITEMS SEMI-ENCLOSED PLAY SPACES FOR YOUNG CHILDREN

507 PROXIMITY OF PLAY AREAS

ISSUE

WITHIN A PLAY SPACE THERE ARE VARIOUS PLAY ACTIVITIES WHICH HAVE THE POTENTIAL TO COMPLEMENT OR CONFLICT WITH OTHER ACTIVITIES. FOR EXAMPLE, A SPORTS AREA COULD CONFLICT WITH SAND PLAY OR COULD COMPLEMENT A BALL PLAY AND WHEEL TOY AREA.

JUSTIFICATION

When planning a play area, the designer should begin with a clear idea of the relationships between various activity areas. These relationships will begin to suggest some zoning strategies which in turn are affected by other zoning considerations discussed in SEPARATED BUT LINKED ZONES. Each activity identified in this document will be listed and proximity considerations will be discussed.

DESIGNATED PLAY STRUCTURES

This area would be both active and passive, and would include dramatic and fantasy play, large muscle activity, and RETREAT AND BREAKAWAY POINTS. For safety, the large muscle activity areas should not be located too close to any other play activity.

CREATIVE PLAY AREAS

These areas will include SMALL ARTS AND CRAFTS NOOKS, and manufactured LOOSE PARTS for building. Materials which can be used for arts and crafts include water, sand, plants, and other natural products of ENVIRONMENTAL YARDS (e.g., seeds, flowers, pine cones, sticks, twigs, etc.).

BERMS AS PLAY EQUIPMENT

Berms support some large muscle play and therefore can be integrated with DESIGNATED PLAY STRJCTURES. Berms must also have free space at the bottom for sliding in summer and winter. Therefore, for safety, a slope with adjoining flat area should be separated from other activities. Slopes may also be needed for INFORMAL PAVED AREAS; berms can fulfill this need.

ENVIRONMENTAL YARDS

Natural play elements such as PROTECTED SAND AND DIRT PLAY AREAS; FENCED ANIMAL AREAS; CHILDREN'S GARDENS; and SUPERVISED FIRE AND COOKING AREAS all have obvious connections to ENVIRONMENTAL YARDS. These elements should be together so that ecological relationships can be seen (e.g., animals fed with wild grasses, watering plants, using sand and dirt as a growing medium, using fire to cook garden vegetables with wild herbs, etc.)

Separate areas such as INFORMAL PAVED AREAS and HARD-SURFACE PLAYING AREAS from plant and animal areas; these activities could disturb animals and be dangerous to plants.

WATER PLAY AREAS

Since water is a natural attractor of people, proximity to adult seating areas would be appropriate. Water is also useful for SMALL ARTS AND CRAFTS NOOKS; PROTECTED SAND/DIRT PLAY AREAS; CHILDREN'S GARDENS; and FENCED ANIMAL AREAS.

NESTS FOR QUIET PLAY

These nests can be located anywhere as long as they are protected from intrusion by surrounding activities. Visual connections for watching as a play activity should be designed in conjunction with high use areas (e.g., sand, water, play structures, etc.). Natural "nests" will exist in ENVIRONMENTAL YARDS and will be made by children in ADVENTURE PLAY AREAS.

RETREAT AND BREAKAWAY

The need for retreat and breakaway points will be greatest in the most active areas, specifically DESIGNATED PLAY STRUCTURES, CREATIVE PLAY AREAS, HARD-SURFACE PLAYING AREAS; INFORMAL PLAY AREAS and related activities. Less-physically challenging areas will need fewer retreat and breakaway points.

FENCED ANIMAL AREAS

Quieter spaces are necessary for animal well-being. Separation from noisy, active areas are necessary. Proximity to natural environment--PROTECTED SAND/DIRT PLAY AREAS; WATER PLAY AREAS; CHILDREN'S GARDENS; and ENVIRONMENTAL YARDS--would be appropriate. Animals can also be part of ADVENTURE PLAY AREAS. If this is the case, they should have their own quiet corner farthest from construction activities.

CHILDREN'S GARDENS

Natural connections exist to FENCED ANIMAL AREAS; WATER PLAY AREAS; PROTECTED SAND/DIRT PLAY AREAS; SUPERVISED FIRE AND COOKING AREA; and ENVIRONMENTAL YARDS. Protection from very active areas is necessary.

PROTECTED SAND AND DIRT PLAY AREAS

Sand and dirt play is almost universal. These elements are necessary for CREATIVE PLAY AREAS; SMALL ARTS AND CRAFTS NOOKS; CHILDREN'S GARDENS; FENCED ANIMAL AREAS; ADVENTURE PLAY AREAS; and ENVIRONMENTAL YARDS.

For safety, sand and dirt play areas should be separated from DESIGNATED PLAY STRUCTURES; INFORMAL PAVED AREAS; OPEN GRASSY PLAY AREAS; and HARD-SURFACE PLAYING AREAS.

ADVENTURE PLAY AREAS

Because of the fence requirement, ADVENTURE PLAY AREAS ARE AUTOMATICALLY SEPARATE FROM other play areas. However, within the fence many areas may exist: construction and building; PROTECTED SAND/DIRT AREAS; WATER PLAY AREAS; FENCED ANIMAL AREAS; CHILDREN'S GARDENS; SUPERVISED FIRE AND COOKING AREAS; and SMALL ARTS AND CRAFTS NOOKS. Links beyond the fence with INFORMAL PAVED AREAS; ENVIRONMENTAL YARDS; OPEN GRASSY PLAY AREAS; and HARD-SURFACE PLAYING AREAS are recommended.

SUPERVISED FIRE AND COOKING AREA

Proximity to CHILDREN'S GARDENS; ENVIRONMENTAL YARDS; and WATER PLAY AREAS has been mentioned. ADVENTURE PLAY AREAS need fire areas in which trash that is no longer useable can be burned.

SMALL ARTS AND CRAFTS NOOKS

Proximity to PROTECTED SAND/DIRT PLAY AREAS; WATER PLAY AREAS; and ENVIRONMENTAL YARDS has been mentioned. The need for DEGREES OF SHELTER and OUTDOOR STORAGE is also evident.

OPEN GRASSY PLAY AREAS
HARD-SURFACE PLAYING AREAS

Physical separation of these sports areas from other play areas is necessary for safety. But visual links for older child-younger child connections, and "nests" for watching children or for RETREAT AND BREAKAWAY are necessary. HARD-SURFACE PLAYING AREAS (e.g., basketball courts) may be linked to INFORMAL PAVED AREAS.

SNOW AND ICE PLAY TRANSFORMATIONS

These will overrun areas used for other thin activities in warmer seasons: BERMS AS PLAY EQUIPMENT for winter sliding; WATER PLAY AREAS for winter skating; OPEN GRASSY PLAY AREAS for snow building, snow fights, and snow games.

INFORMAL PAVED AREAS

Visual connection with the street and physical separation of INFORMAL PAVED AREAS from the actual street which cars drive on is necessary.

Some double-functioning of LOOPED CIRCULATION space and INFORMAL PAVED AREAS is possible. INFORMAL PAVED AREAS may be linked to other physically active areas: DESIGNATED PLAY STRUCTURES; OPEN GRASSY PLAY AREAS; HARD-SURFACE PLAYING AREAS. Some NESTS FOR QUIET PLAY should overlook INFORMAL PAVED AREAS since watching is an important part of this aspect of play.

PATTERN

PROXIMITY OF PLAY AREAS

THOSE ACTIVITIES WHICH ARE COMPATIBLE SHOULD BE CLOSE TOGETHER WITH EASY CROSS-ACCESS. THOSE WHICH ARE INCOMPATIBLE MUST BE PHYSICALLY IF NOT VISUALLY SEPARATED.

RECOMMENDATIONS

- See Matrix for summary of recommended relationships between various play areas.

PROXIMITY OF PLAY AREAS

AREAS	STREET	SNOW/ICE PLAY AREAS	SPORTS	ARTS/CRAFTS AREAS	FIRE/COOKING AREAS	ADVENTURE PLAYGROUND	SAND/DIRT AREAS	PLANTS	ANIMALS	RETREAT AREAS	NESTS	WATER PLAY AREAS	ENVIRONMENTAL YARDS	BERMS	CREATIVE PLAY AREAS	PLAY STRUCTURES
PLAY STRUCTURES	○	–	–	☒	☒	–	☒	☒	☒	○	○	–	☒	○	○	
CREATIVE PLAY AREA	☒	–	☒	○	–	○	○	–	–	–	–	–	○	–		
BERMS	–	○	☒	–	–	–	–	–	–	○	–	–	○			
ENVIRONMENTAL YARDS	☒	–	☒	○	○	–	○	○	○	○	○	○				
WATER PLAY AREAS	☒	○	☒	○	○	○	○	○	○	–	–					
NESTS	○	–	○	–	–	○	–	–	–	–						
RETREAT AREAS	○	–	○	–	–	○	–	–	–							
ANIMALS	☒	–	☒	–	☒	○	○	○								
PLANTS	☒	–	☒	○	○	○	○									
SAND, DIRT AREAS	☒	○	☒	○	○	○										
ADVENTURE PLAYGROUNDS	–	–	–	○	○											
FIRE COOKING AREA	☒	–	☒	–												
ARTS/CRAFTS	☒	–	☒													
SPORTS	○	○														
SNOW ICE PLAY AREAS	–															
STREET																

○ COMPATIBLE
☒ INCOMPATIBLE
– NOT AN ISSUE

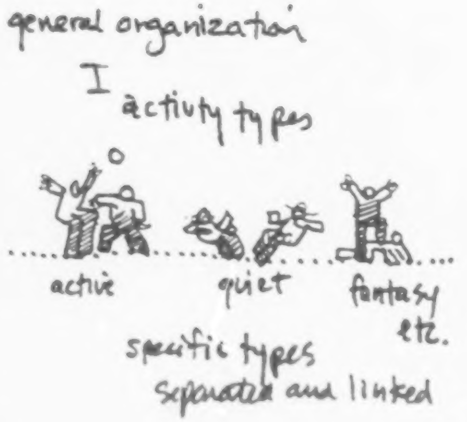
RELATED ITEMS

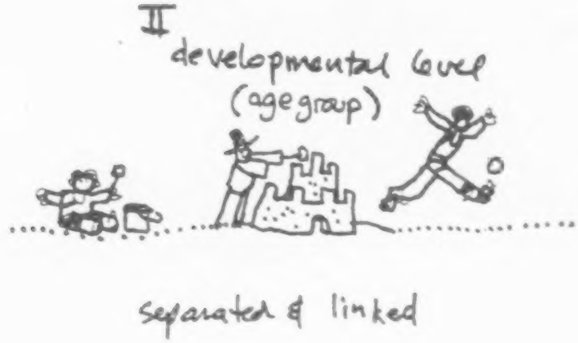
NETWORK OF PLAY
COMPREHENSIVE PLAYGROUNDS
SEPARATED BUT LINKED ZONES
CONTINUITY AND BRANCHING

508 SEPARATED BUT LINKED ZONES

ISSUE

FOR CLARITY AND SAFETY, CHILDREN SHOULD HAVE A CHOICE BETWEEN PLAY AREAS WHICH ARE ORGANIZED IN ACCORDANCE WITH ACTIVITY TYPES (ACTIVE-QUIET; STRUCTURED-UNSTRUCTURED) AND DEVELOPMENTAL LEVELS (YOUNGER APPEALING OLDER APPEALING).


general organization
I
activity types
active
quiet
fantasy etc.
specific types
separated and linked

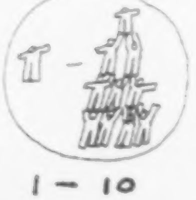

II
developmental level
(agegroup)
separated & linked

JUSTIFICATION

In the NETWORK OF PLAY, each particular playspace has various zones for active play, quiet play, different user groups.

Children develop in various stages acquiring different levels of competence at each stage of development. For example, eighteen-month-old children generally are very egocentric in their play, whereas four-year-old children are much more social. As the eighteen-month-old is learning to coordinate balance and movement, the four-year-old is refining motor skills such as running and jumping (Ilg and Ames, 1974). Therefore, developmental stages have varying skills which require different environments.

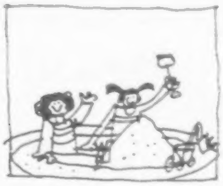
• groupsize for planning



1 — 10

Children have different space requirements depending upon the size of a group. A large space can be frightening to a single child, but crowded for a group of ten. Research indicates that separation of different activities reduces the potential for conflict between play areas (Sierens, 1969). It is necessary to note that the separation of areas also provides an element of safety for smaller children who would be able to locate away from older children's play areas.

developmental goals reinforced in small group play



As has been noted in discussions of size and scale (see RANGE OF SOCIAL SCALE), smaller groupings of children are best for development (Travers and Ruopp, 1978). In "The Effects of Spatial Density on Behavior Styles of Children," Chalsa Loo (1977) found:

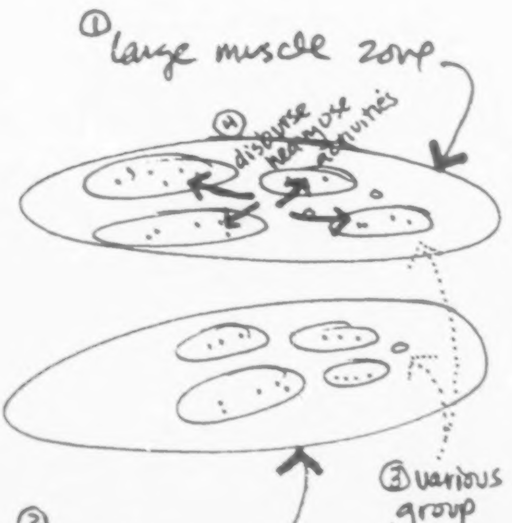
> *There was* more *aggression or* less *positive social overtures in the high density condition than in the low density condition.* (p. 59)

Smith and Connolly (n.d.) agreed that higher density increased aggressive behavior. Schneekloth (1975) discovered that the spatial distribution of objects markedly structured the use of space by children. Children tended to group themselves around pieces of large equipment. Schneekloth further found that the presence of manipulables decreased use of large equipment. Children using large equipment were usually in groups of more than two and those using manipulables played in pairs (or alone).

The combination of these results indicate the following:

- In zoning large-muscle activity equipment and small-muscle manipulative play, different-size groups must be allowed for.
- In all zoning, heavy-use activity areas should not be allowed to "pile up" densities which will be detrimental to the child's social development.

ZONING play areas / playlots



From observations of children's behavior in the play areas visited in this project (see Travel Report, 1978), the following findings emerge:

- Play yards based on developmental level are necessary for children because activities for different developmental levels can conflict.

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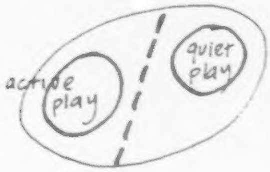
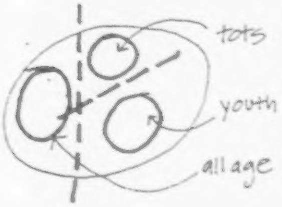
Kinds of Zoning Alternatives

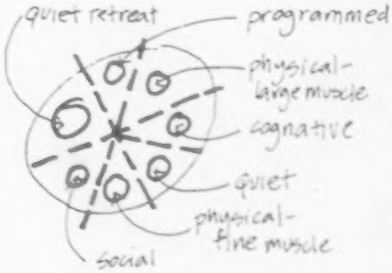
- Kinds of play


active play
quiet play

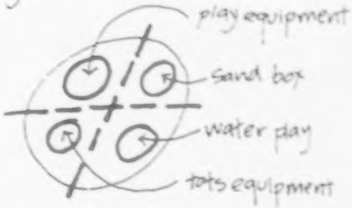
- Age group (stage of development-equipment size)


tots
youth
all age

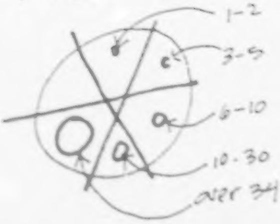
- Developmental Task


quiet retreat
programmed
physical-large muscle
cognative
quiet
physical-fine muscle
social

- Activity Area


play equipment
sand box
water play
tots equipment

- Group Size


1-2
3-5
6-10
10-30
over 34

- Use varies according to age and stage in the life cycle. At Ontario Place there were bigger and smaller versions of most of the equipment to facilitate a self-selection gradient for children with different abilities.

- Children of different ages and levels of ability should be able to interact with each other.

- Clear deliniations of activity areas facilitate the ordering and organization of stimuli as well as the choice of activities.

In order to accomplish zoning of activity areas while at the same time providing links between activities at various developmental levels, a combination of concentric circles and wedges might be an appropriate design approach.

Other items in this guide contribute directly to this pattern:

PROXIMITY OF PLAY AREAS

- Play for adults and play for older children should coordinate with play for small children.

- For safety, very active spaces should not impinge on quiet play (e.g., swinging rope and sand play).

"CHILDREN ONLY" AND MULTIPLE AGE GROUP PLAY TERRITORIES

- Adults or older children supervising young children need space which is comfortable for them, while still keeping visual lines open between child and caretaker.

RETREAT AND BREAKAWAY POINTS

- Children involved in active play may need to retreat periodically when stress or group pressure become too much.

LOOPED CIRCULATION

- Looping circulation with no direct circulation through activity spaces is best.

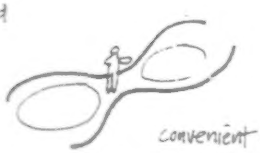
PRINCIPLE

SEPARATED AND LINKED ZONES

CREATE PLAY WORLDS VARYING IN SPACE, SIZE, AND LOCATION WHICH GIVE THE CHILD A CHOICE OF PLAY AREAS. ZONE ACTIVE TO QUIET AREAS; SEPARATE STRUCTURED ACTIVITIES (KICKBALL) FROM UNSTRUCTURED ACTIVITIES (QUIET NODES); AND DEFINE ZONES WHICH WILL APPEAL TO YOUNGER VERSUS OLDER CHILDREN. ENSURE, HOWEVER, THAT ALL THESE AREAS AND ZONES ARE INTERCONNECTED SO THAT CHILDREN CAN SEE FROM ONE TO THE OTHER AND CAN MOVE FREELY FROM ONE TO THE OTHER.

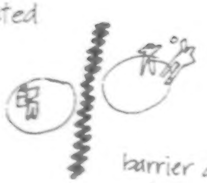
Methods of zoning

- Linked



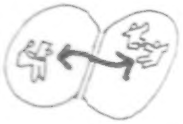
convenient but not next to it

- Separated



barrier of
distance
landform
path
etc

- contiguous



Each area is
defined but
immediately
connected
to the other

RECOMMENDATIONS

- Use concentric zones to separate activities from most quiet at the center to most active at the perimeter. Use wedges to divide the circles into activities which are most appropriate to children at various developmental levels.
- Make the circles progress in PACED ALTERNATIVES, and make cross-over easy from wedge to wedge and from circle to circle.

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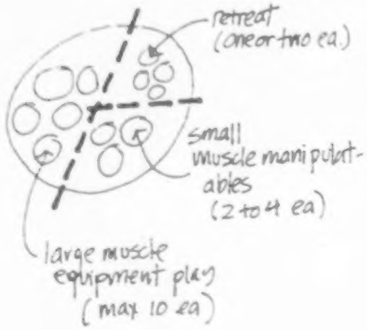
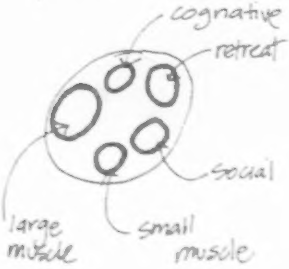
- Size of groups for various activities/range of social scale


retreat (one or two ea.)
small muscle manipulat-ables (2 to 4 ea)
large muscle equipment play (max 10 ea)

- Plan all sub-zones to accommodate small groups (1-10 children).

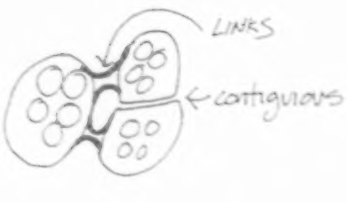
- identify zones by developmental goals


cognative
retreat
social
large muscle
small muscle

- Identify zones by developmental goals rather than age groups, with links between developmental levels.

- Plan spaces for a RANGE OF SOCIAL SCLAE: quiet retreat for one or two; small muscle manipulables for two to four children; large muscle equipment for up to 10.

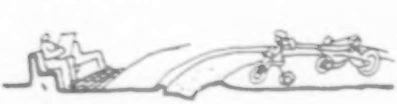
- Kinds of connections


LINKS
contiguous

- Identify and separate quiet and active areas physically, but make crossover easy to accomplish (links).

- Provide circulation which can follow the circle-wedge pattern and help provide separation for safety.

- special users



- Identify and separate zones by user groups only when necessary (e.g., adults who only want to observe children, not play with them).

RELATED ITEMS

CONTROLLED ACCESS
PROXIMITY OF PLAY AREAS
LOOPED CIRCULATION
SEMI-ENCLOSED PLAY SPACES FOR YOUNG CHILDREN
RANGE OF SOCIAL SCALE
"CHILDREN ONLY" AND MULTIPLE AGE GROUP PLAY TERRITORIES
RETREAT AND BREAKAWAY POINTS
NETWORK OF PLAY

509 SEMI-ENCLOSED PLAY SPACES FOR YOUNG CHILDREN

ISSUE

YOUNG CHILDREN PREFER SPACES THAT FEEL SAFE, PROTECTED, AND AT LEAST PARTIALLY ENCLOSED.

JUSTIFICATION

Parents of very young children feel more secure having their children enclosed and protected. Various sources, like Lady Allen of Hurtwood (1968, p. 31), and Anne-Marie Pollowy (1977) agree that young children also prefer the sense of security and calm attained by a sense of enclosure. If play spaces for preschoolers are enclosed, and are within view of dwellings, parents will feel free to leave their children there to play, without the need for constant supervision (Cooper, 1975).

Physically containing the play space with some form of low enclosure serves to define and protect the preschool area from the activities taking place around it. Enclosing the play area also simplifies the task of supervision as it discourages little ones from wandering off in all directions (Central Mortgage and Housing Corporation, 1978, p. 19).

The counterprevailing tendency, without which we would have complete justification for recommending totally enclosed and separated play spaces for different ages and different types of activities, is that children learn a tremendous amount from observation. A young child will watch an older child and then will imitate the behavior seen, or may go over to where the older child was playing and try the same thing. Conversely, older children also learn from helping younger brothers and sisters, or friends, to accomplish new tasks. Children therefore need to be able to watch each other, to join the activities of others as desires dictate, and generally to be free to roam from activity to activity and from age group to age group (see Mary B. Connally Children's Playground, Travel Report, 1978, p. 141).

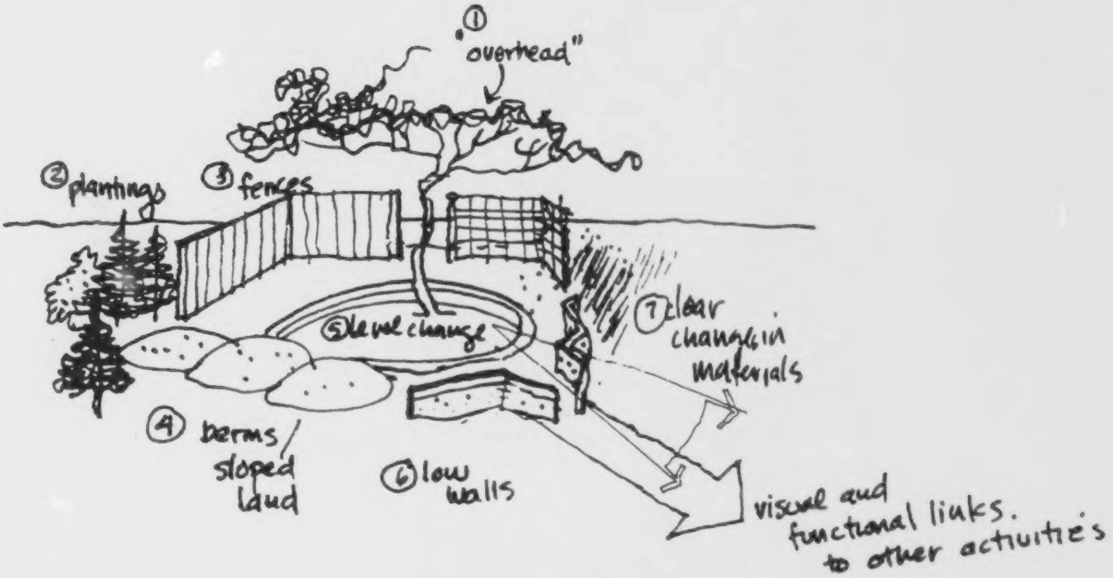
PATTERN

SEMI-ENCLOSED PLAY SPACES FOR YOUNG CHILDREN

USE ENCLOSING ELEMENTS AT CHILD HEIGHT TO GIVE CHILDREN A SENSE OF ENCLOSURE AND TO PROTECT PRESCHOOL-AGE CHILDREN FROM THE BOISTEROUS ACTIVITIES OF OLDER CHILDREN, WITHOUT BLOCKING PARENTS' VIEWS INTO THE PLAY SPACE.

RECOMMENDATIONS

- Surround preschool play areas with multiple enclosing elements to ensure a partial sense of enclosure and security, but not isolation, from surrounding activities.


① "overhead"
② plantings
③ fences
④ berms/ sloped land
⑤ level change
⑥ low walls
⑦ clear change in materials
visual and functional links to other activities

- Provide enclosing elements which are child-size, 2-2.5 ft. high, and which do not block views.

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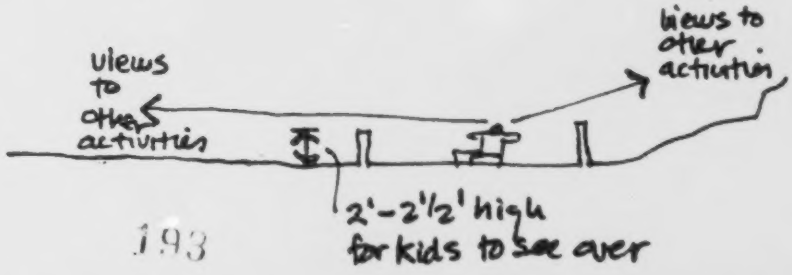
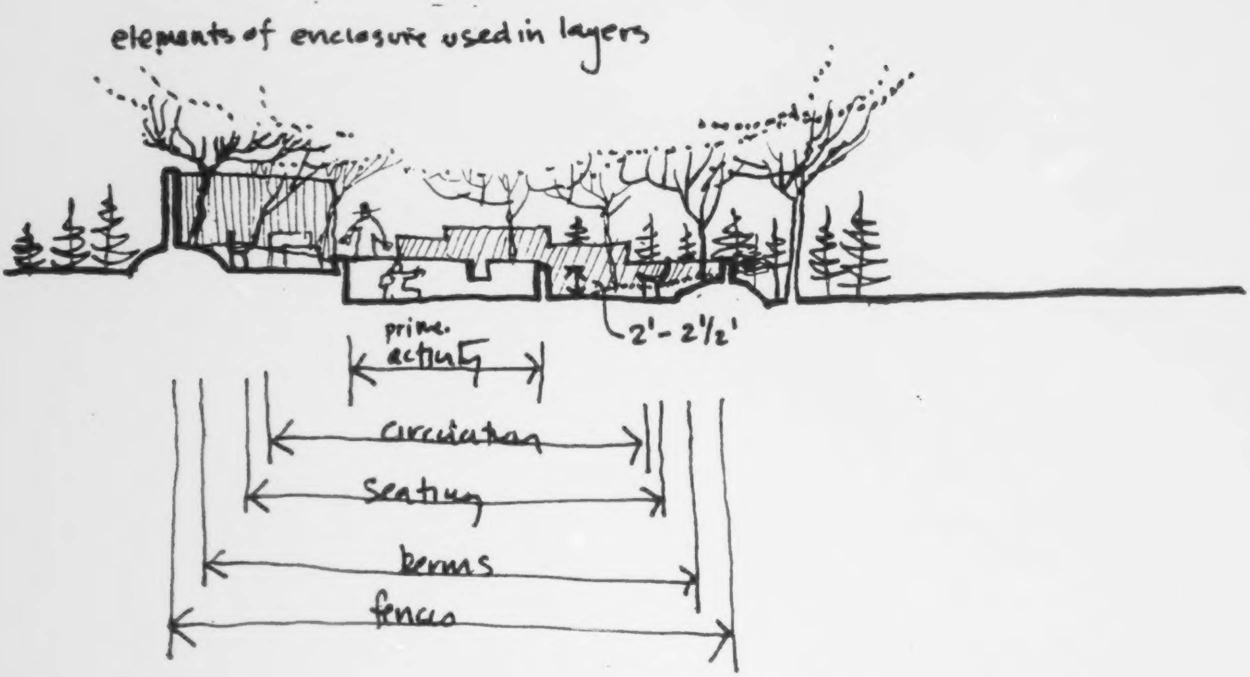

views to other activities
views to other activities
2'-2½' high for kids to see over


elements of enclosure used in layers
2'-2½'
prime. activity
circulation
seating
berms
fences

RELATED ITEMS

CIRCLES AND WEDGES
DEVELOPMENTALLY-APPROPRIATE PLAY SPACES FOR INFANTS
LOOPED CIRCULATION
VIEWS TO AND FROM PLAY AREA
SEPARATED BUT LINKED ZONES

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510 LOOPED CIRCULATION

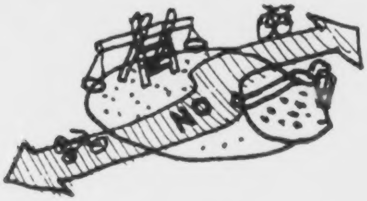
ISSUE

A CRITICAL FACTOR IN THE ORGANIZATION OF THE PLAY SPACE IS CIRCULATION WITHIN THE PLAY SPACE.

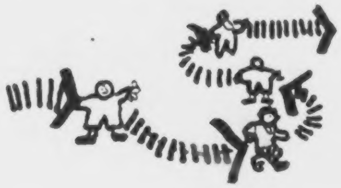
JUSTIFICATION

Many factors from other patterns will influence site design relative to circulation:

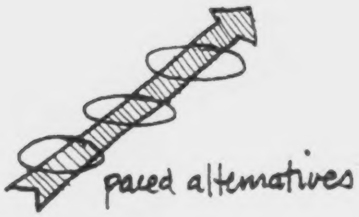
through traffic / no



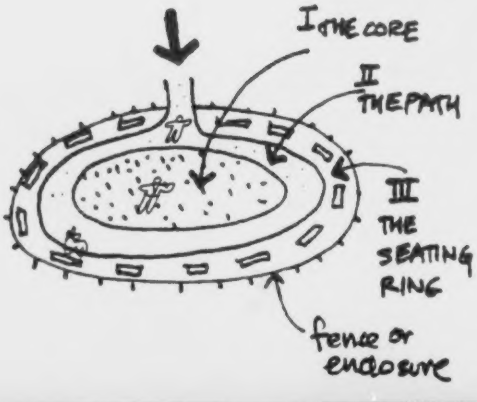
- Once inside, small children should be kept inside the play area for safety.
- For safety in activity spaces, through traffic (i.e., older kids on bikes) should be discouraged.
- Maintenance equipment should be able to get into and through the space as necessary (Central Mortgage and Housing Corporation, 1978).



- Small children should be able to progress from activity to activity within the play space safely and easily.
- Circulation should encourage a developmental progression through paced alternatives (i.e., from one play area the link to the next level of difficulty should be clear--a small slide may lead to a larger slide, etc.).



- Circulation should help prevent dangerous mixing of activities. Children who are jumping, swinging, sliding, etc. should not interfere with children playing in the sand. The National Committee for Safety on Fixed Equipment Playgrounds, in a checklist, asks, "Are the swings sited to deter children from running in their path?" This question might be repeated for every active area which could possibly be dangerous to children passing by.
- Some circulation may double-function as places for STREET PLAY (e.g., Central Park Playgrounds, Travel Report, 1978, p. 86).



I. The core--the main activity area.

II. A hard-surfaced path--for circulation and wheeled toys.

III. The outer ring fence and benches--boundary control and a place for adults, rest and observation.

Other examples of successful access and circulation designs are the following:

- Pacific Oaks:

  Shady Lane is one of the most effective organizational features of this School. Multiple-functioning as circulation, entry/transition area, and meeting and talking area for parents and staff, it also provides an ideal activity space for trikes and wagons. (Travel Report, 1978, p. 334)

- From a description in A Playground for All Children:

  Many of the designs submitted had, in addition to the other major circulation routes within the playground, an outer ring pathway that connected the various activities and aided in orientation. (U.S. Department of Housing and Urban Development, 1978, Book 3, p. 92)

- Washington Environmental Yard:

  The looping circulation assures no dead ends where children might plow into fragile vegetation. It also provides natural edges to help differentiate the three major eco-systems--chaparral hills, woodlands, and water marshlands--and variations. (Travel Report, 1978, p. 165)

- Mary B. Connolly Children's Playground:

  Play areas with developmentally-appropriate, challenging things to do seem to lead to a natural self-selectivity of the child to his or her own level, and if properly separated by space and subtle material and level changes (sand to asphalt path, back to asphalt) don't seem to need fences or other arbitrary devices to keep children apart. On the contrary, this allows freer mixing of children of different ages and the freedom for a child to move from area to area as challenge or mood move him or her. (Travel Report, 1978, p. 141)

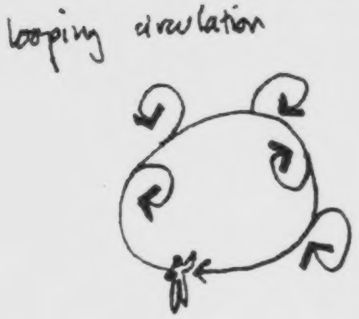
PRINCIPLE

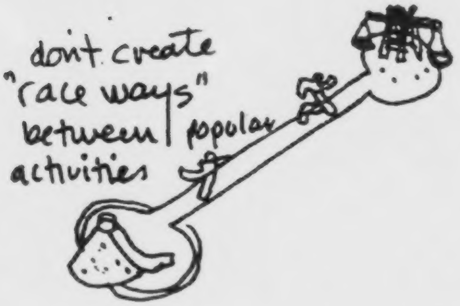
LOOPED CIRCULATION

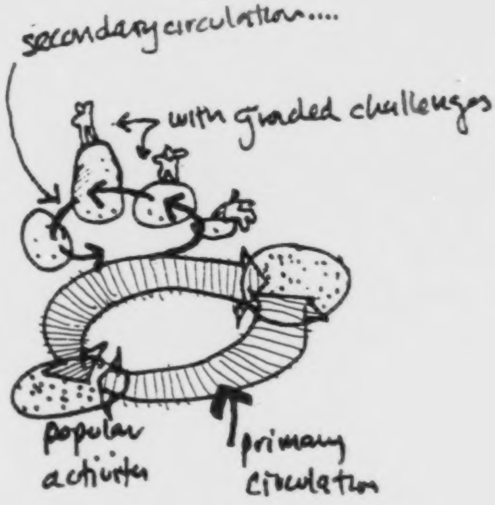
WITHIN THE PLAYSPACE, CIRCULATION SHOULD BE LOOPING AND USED TO DEFINE ZONES OF ACTIVITY.

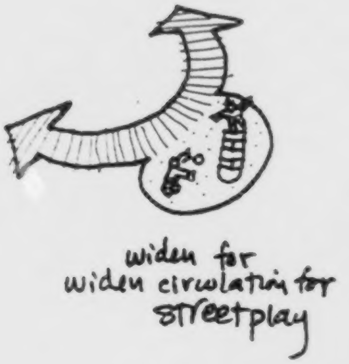
RECOMMENDATIONS

- Use looping circulation with no long straight stretches of path to tempt children to run too fast for safety.
- Allow all activity areas to be visible from circulation so children can easily see to choose where they want to go.
- Secondary circulation between activities should clearly lead in a sequence of graded challenges whenever possible.


looping circulation


don't create
"race ways"
between popular
activities


secondary circulation....
with graded challenges
popular activities
primary circulation


widen for
widen circulation for
streetplay

- Let main circulation be clearly separated from activity areas, possibly by dead-end branches from major path.
- Allow major circulation to widen where necessary to double-function as STREET PLAY space.

RELATED ITEMS:

CIRCLES AND WEDGES
PROXIMITY
CHALLENGE WITHOUT UNDUE RISK
CONTROLLED ACCESS
CONTINUITY AND BRANCHING

511 CONTINUITY AND BRANCHING

ISSUE

ACTIVITIES WHICH DEAD END OR OPEN ONTO AN UNDEFINED PLAY AREA DIMINISH THE CHILD'S LEVEL OF MOTOR ACTIVITY, INTENSITY, DECISION-MAKING OPPORTUNITIES, AND ATTENTION SPAN. FOR EXAMPLE, ONCE REACHING THE BOTTOM OF A TRADITIONAL SLIDE, THERE IS USUALLY NO OBVIOUS OR DIRECT CONNECTION TO OTHER PLAY ACTIVITIES OTHER THAN GOING BACK UP THE SLIDE AND SLIDING DOWN AGAIN.

JUSTIFICATION

Young children have more difficulty with sequencing and are more easily distracted by surrounding elements of the environment (Millar, 1968). As children become older, they become more selective of elements of the enviornment to which they choose to respond.

Cherry (1976) recommends encouraging movement from activity to activity by limiting the amount of space devoted to any one activity (p. 20).

John Holt suggests that paths from activity to activity become parts of play as well. Catwalks entice children to use them as playspace as well as circulation (in David and Wright, 1974, p. 143).

When a child has come to the end of one activity or a cycle of activities, there should be immediately and obviously a choice of continuing options. Providing this can enhance the following:

- motor activity
- free play
- exploration
- discovery
- attention span
- decision making
- spatial awareness

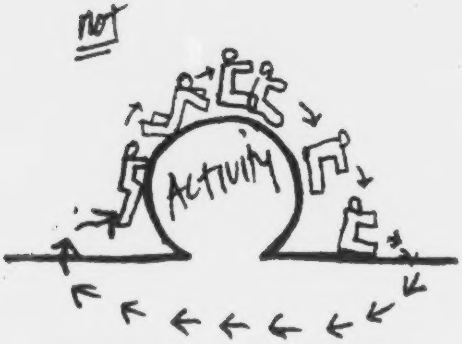
PRINCIPLE

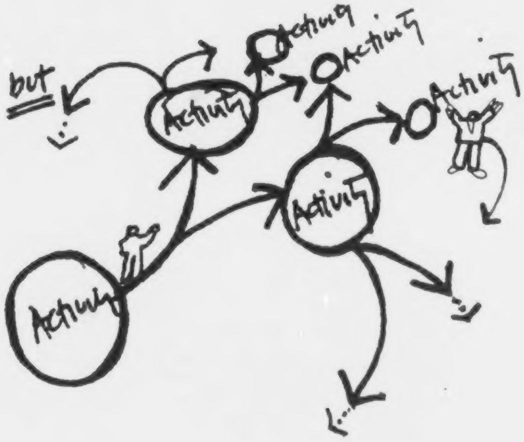
CONTINUITY AND BRANCHING

THE ENVIRONMENT SHOULD ALLOW FOR ACTIVITIES TO FLOW AND MOVE ACTIVELY AND CONTINUOUSLY WITH MULTIPLE BRANCHES AND ALTERNATIVES AT CROSSROADS AND DECISION POINTS.

RECOMMENDATIONS

- The child should be able to see and understand the parts as well as the whole.
- The child should be able to see alternative directions and activities once terminating an activity.
- The child should be able to withdraw into his or hew own private world when he or she wishes to.
- Activities and attention span should be controlled by using intentional divisions or barriers.
- Activity areas, connections, and links should be clearly defined and understandable (Moore, Cohen and Team 699, 1977).
- Branching should happen horizontally, vertically, and in a combination of directions (Shaw, n.d.).


not
ACTIVITY


but
Activity
Activity
Activity
Activity
Activity
Activity

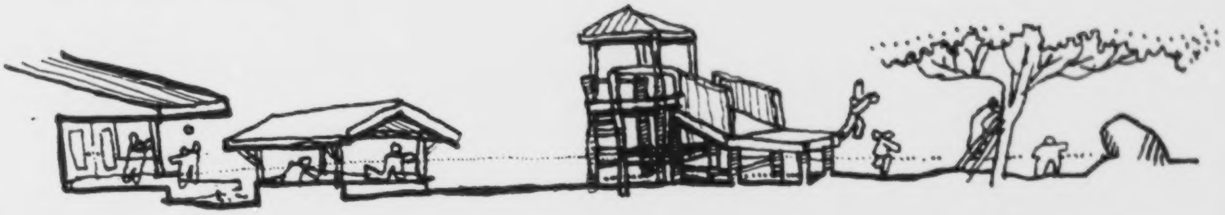
512 DEGREES OF SHELTER

ISSUE	CHILDREN ENJOY OUTDOOR EXPERIENCES DESPITE SEASONAL WEATHER VARIATIONS. PHYSICAL PROTECTION FROM BAD WEATHER CONDITIONS CAN EXTEND THEIR OUTDOOR PLAY SEASON.
JUSTIFICATION	"Playgrounds are often too open, windy, and disagreeable," (Bengtsson, 1970, p.

The outdoor area offers a wealth of opportunities for children to learn and grow. It is a natural environment controlled by the sun, rain, wind, and snow. However, weather conditions should not hinder children's outdoor experiences nor inhibit them from exploring their natural environment. Children can be clothed for almost any temperature extremes for outdoor play. Even if the play period is shortened during very cold or bad weather, the benefits of outdoor play remain.

Although children should be in contact with the outside as much as possible, they need protection from adverse weather conditions such as rain, wind, and cold. This protection should serve as a screen or filter which excludes the bad weather conditions and admits the desired ones.

variety of outdoor shelter


porches
transition space & use space
covered areas (sand, art & crafts etc.)
as part of play structures (also storage)
natural shelter

Britain and other European countries have long recognized the value of sheltered outdoor play in all seasons (Bengtsson, 1970; Utzinger, 1970; Lady Allen, 1968). Utzinger (1970), after studying many European nursery schools and playgrounds, recommends:

> *A transitional space from outdoors to indoors should be provided. This could be a covered play area immediately adjoining the playroom areas which will protect youngsters from hot sun, snow, rain, and wind, but allow them to play outside.* (p. 78)

The microclimate of outdoor areas can also be utilized to enhance year-round outdoor play possibilities. Cohen (1974) has made some some suggestions about the use of trees and overhangs to serve as protective shelter for both extremes of weather; users should have shade during the summer and sun during the winter. Deciduous trees are an often used filter, providing shade during summer and sunlight when their leaves fall in winter. Coniferous trees serve as a barrier from cold, strong winds. A degree of enclosure also creates a feeling of protection. Overhangs and awnings can be used as protective roofs and walls on two sides to provide shelter to an area from heavy winds.

Besides the need for shelter from wind, rain, snow, sun, etc., there are also certain activities which seem to require some shelter, but are more outdoor than indoor activities.

These may include carpentry, finger painting, animal play, plant tending, loud music play, etc. For these types of activities Osmon (1971) recommends "semi-shelter" which encloses an area only when needed.

Another need for shelter exists where plants, animals, loose parts, and other perishable types of play equipment must be stored (e.g., props and costumes for dramatic play). It is important that these things be kept safe from adverse weather conditions and vandalism.

PATTERN

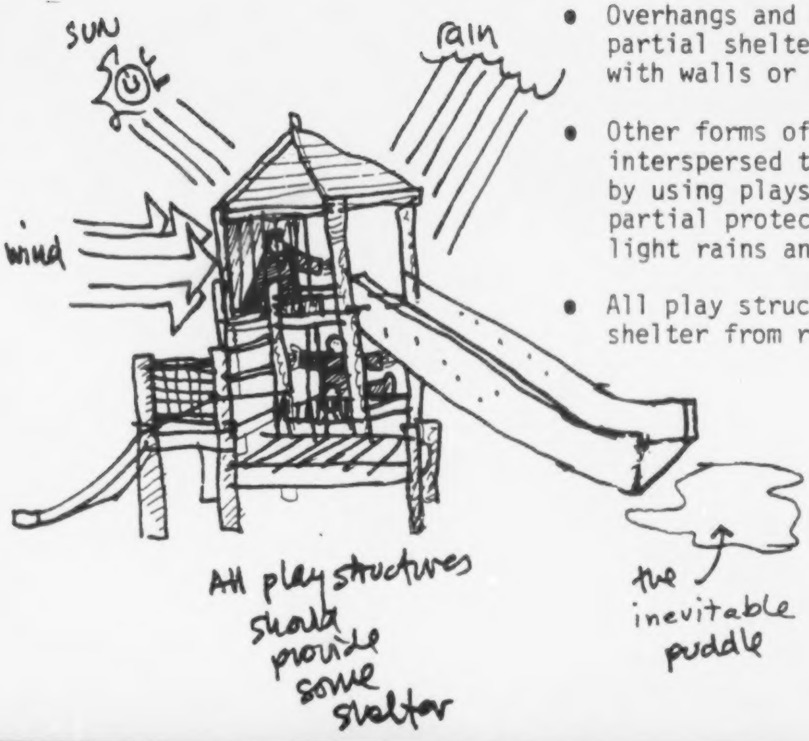
DEGREES OF SHELTER

WHERE THERE IS ANY TYPE OF CHILDREN'S BUILDING (CHILD-CARE CENTER, ARTS AND CRAFTS CENTER, RECREATION CENTER, PLAYLEADER'S HUT), CREATE VARIOUS DEGREES OF SHELTERED PLAY AREAS WHERE CHILDREN CAN FREELY PLAY WHILE BEING PROTECTED FROM ADVERSE WEATHER. MAKE AT LEAST ONE SHELTERED AREA A TRANSITIONAL SPACE BETWEEN THE INSIDE AND OUTSIDE.

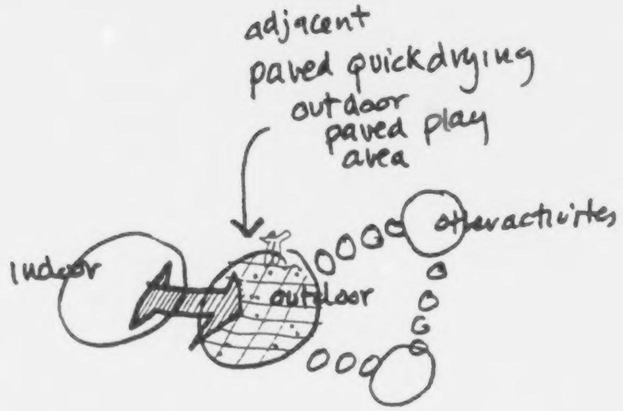
PROVIDE SUNNY AREAS, DRY SPOTS, SHADY AREAS, AND WIND BUFFERS.

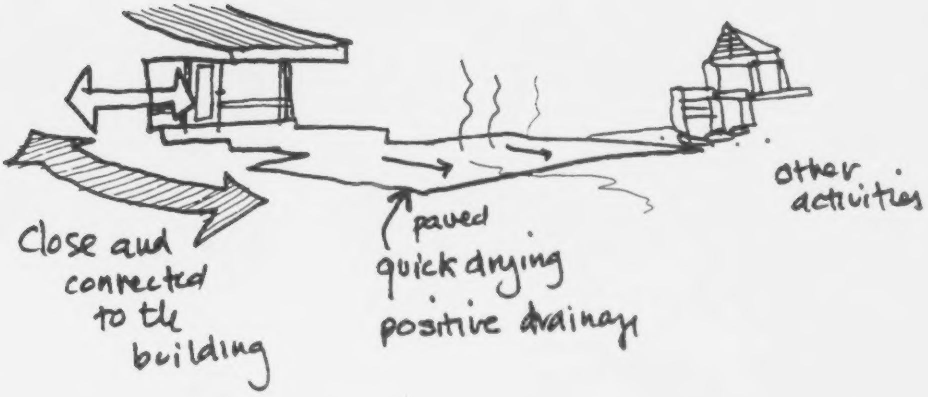
RECOMMENDATIONS

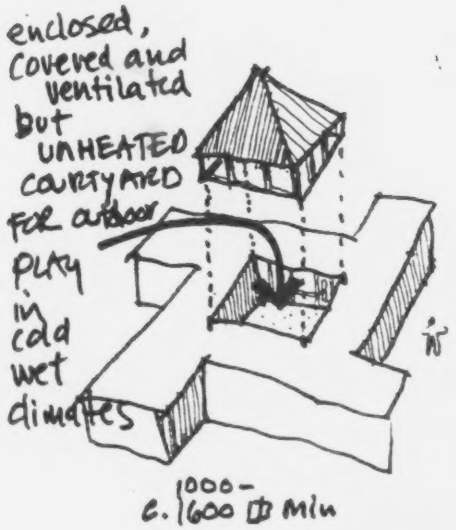
- Outdoor sheltered space should be provided in some form at all appropriate play spaces.
- Where there is indoor space adjoining play areas (e.g. school playground), shelter should be transitional between indoor and outdoor space. This space may be "borrowed" from the building form.
- Covered or semi-covered verandas or porches or a deep, dry play area with a translucent roof and walls on one or two sides can make ideal transitional play areas.
- Use vegetation to admit the sun, to buffer winds in winter, and to provide shade during the summer.
- Overhangs and awnings can be used as partial shelter, especially when combined with walls or vegetation as wind buffers.
- Other forms of sheltered play space can be interspersed throughout outdoor play areas by using playsheds, walls, bushes, and trees as partial protection from winds, harsh sun, light rains and snows.
- All play structures should provide some shelter from rain and wind.


sun
rain
wind
All play structures should provide some shelter
the inevitable puddle

- Surfaces adjoining sheltered play should be quick drying (e.g., paving, brick, gravel, etc.) with slower drying surfaces farther away (grass, dirt, sand, etc.) (Osmon, 1971).


adjacent
paved quickdrying
outdoor
paved play
area
indoor
outdoor
other activities


Close and
connected
to the
building
paved
quick drying
positive drainage
other
activities


enclosed,
covered and
ventilated
but
UNHEATED
COURTYARD
FOR outdoor
play
in
cold
wet
climates
1000-
c. 1600 ☐ Min

- In climates where cold, wet weather lasts several months, a closed, sheltered indoor playground might be considered. Several temporary winter playgrounds in the Scandinavian countries have been very successful (Bengtsson, 1970).
- Hut-type structures can be used to make weather-tight areas for children's play.
- In play areas where there are no adjoining indoor spaces, storage and play shelter should be combined so that playthings are available without leaving the shelter.

RELATED ITEMS: OUTDOOR STORAGE
FAVORABLE MICROCLIMATES
POSITIVE DRAINAGE

DESIGN OF ACTIVITY SPACES

600

The following patterns are recommendations for specific types of play areas. Most are identified as unique activity areas or as places with special qualities. They, therefore, can be developed as individual play areas, may be joined together with LINKS (see 209) to provide a community-wide NETWORK OF PLAY (see 502), or they may be combined in one large site to create a COMPREHENSIVE PLAYGROUND (see 503).

601 Shared Open Space
602 Informal Paved Areas
603 Home-Based Activity Pockets
604 Open Grassy Playing Areas
605 Hard-Surface Playing Areas
606 Adventure Play areas
607 Creative Play Areas
608 Environmental Yards
609 Children's Gardens
610 Fenced Animal Areas
611 Designated Play Structures
612 Play Spaces for Infants
613 Skateboarding Runs
614 Residual Areas

601 SHARED OPEN SPACE

ISSUE

CHILDREN ARE THE PRIMARY USERS OF OUTDOOR AREAS. UNDEVELOPED OPEN SPACE IN CLUSTERED HOUSING DEVELOPMENTS WHICH IS LEFT FOR THE RECREATIONAL USE OF RESIDENTS OFTEN GOES UNUSED. WHEN PLAY AREAS FAIL TO ABSORB THEIR INTERESTS, CHILDREN LOOK ELSEWHERE FOR PLAY OPPORTUNITIES.

JUSTIFICATION

According to Clare Cooper Marcus (1975), most designers of residential housing complexes spend their time worrying about where cars will be parked, the arrangement of house facades, and how garbage will be disposed of. After these issues are resolved, they then take care of children's needs by installing swings and sandboxes in leftover spaces.

After studying residents' use of communal open spaces at Easter Hill Village, Cooper Marcus concluded that such space will be used only if it is attractively landscaped and contains benches and play equipment as well as other social foci such as a commonly-used route between dwellings and other shared facilities. If one of more of these criteria is not fulfilled, she predicts that common open space will not be used and that social and play activities will more likely take place on adjacent sidewalks and in parking areas.

Similar observations have been made by Hill (1977) and England's Department of the Environment (1973). Hill emphasizes the importance of location when planning shared play areas. Observations of children's play activities reveal that young children tend to play close to home. The Department of the Environment recommends that play areas in residential housing complexes be as close as possible to the dwellings they serve. They emphasize that merely providing grassy open spaces is not enough to absorb children's interest and energies since grass is suitable for such a small range of activities. They argue instead for a network of large and small spaces which provide a variety of surfaces for children's activities.

Residents of housing complexes containing commonly-used territory can be encouraged to recognize it as "belonging" to them. It will be considered within their sphere of influence when such territory is combined with networks of private yards, public paths, and other shared-use facilities. The resulting intensity of use generally creates a safer atmoshpere for children because their activities are easily observed by adults passing by.

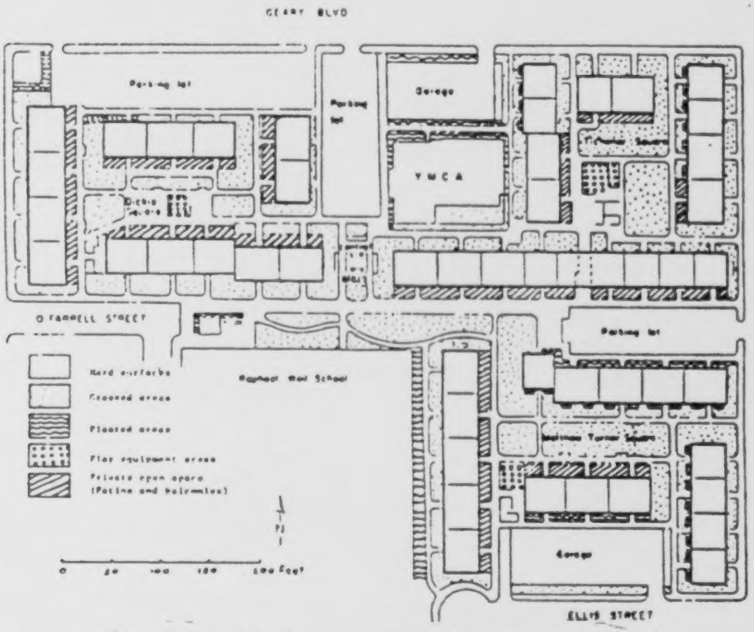
At Easter Hill Village, Cooper Marcus also emphasized the need for including seating near children's play spaces. Seating areas not only allow adults to sit near by to observe children's activities, but also provide a convenient get-away place where parents can meet to talk to one another, yet still be close to home.

Hester (1975) described a similar situation which confronted designers at the Jefferson Park Housing Project in Cambridge, Mass. When the play court was redeveloped, residents were adamant in their desire to retain the four-corner clothesline areas with benches and tables where strong friendship circles had developed. Here fathers met to drink beer after work and young parents with limited mobility could get away from their home to socialize as well as watch their children play.

Hester notes that other housing complexes have been equally successful in dispersing their play areas rather than concentrating them. At Ridgefield Park in Chapel Hill, North Carolina, play areas are arranged around dwellings to enable parents to observe their children's play from inside their apartments. This dispersal method is beneficial where there are combinations of families with and without children. Smaller play spaces can be located in various parts of the complex away from childless families to reduce noise and other interference generated by children at play.

Where housing is planned in Radburn-type plans, as at many military installations, or where row- or single-family housing is grouped around shared open space, the proper design of this shared space can make or break it as a good play space for children.

One of the most successful schemes is St. Francis Square Housing Development in San Francisco by Marquis and Stoller, Architects.


GEARY BLVD
WEBSTER STREET
LAGUNA STREET
O'FARRELL STREET
ELLIS STREET
Parking lot
Parking lot
Parking lot
Garage
Garage
Y M C A
Raphael Weil School
Hard surfaces
Grassed areas
Planted areas
Play equipment areas
Private open space (Patios and balconies)
N
0 50 100 150 200 Feet

St. Francis Square Housing Development
San Francisco, California

From our site visit there (see Travel Report, 1978, pp. 154-155), combined with published studies and commends by the evaluator, we derived the following lessons about why the interior shared spaces were successful for children's play:

- The open space is well-defined.
- There are small court-yard sized spaces, square or nearly square, which are in the range of 150-200 ft. on a side.
- The ratio of building height to open space is in the range of 1:5 to 1:8.
- Housing units open to the interior off pathways, with gardens, balconies, and heavily-used interior spaces like kitchens or work studios overlooking the courts, and with parking on the periphery.

- There is a variety of settings and landscape elements--spaces, grade changes, plant materials, surface types, site furniture, and, perhaps least important, play equipment.
- There is a variety of vertical elements not sepcifically designed as play areas--fences, bushes, benches, poles, lamp posts, trellises, garbage sheds, and slopes.
- There are wide pathways and other hard surfaces, undesignated for play, but where play will happen anyway.
- There are centralized, visually focusing and challenging play structures which act as magnets around which play may focus.
- Grass and berm areas--retreat and breakaway points--are near the center yet visually somewhat separated.
- Informal play areas with sand, water, grass, and trike areas are near dwelling entrances.
- Defensible territory is created by narrow openings from the street, grade changes from the street, and eyes on the interior open space.

PATTERN

SHARED OPEN SPACE

AMONG HOUSING, PROVIDE WELL-DEFINED, SMALL COURTYARD-SIZED SHARED OPEN SPACE WHICH IS COMPRISED OF SOFT- AND HARD-SURFACED AREAS, GOOD LANDSCAPING, AND HAS A VARIETY OF INFORMAL PLAY POSSIBILITIES FOR CHILDREN AS WELL AS SOCIAL POSSIBILITIES FOR ADULTS.

FURNISH IT WITH SAND AND WATER PLAY AREAS FOR YOUNG CHILDREN, SOME CLIMBING APPARATUS FOR ELEMENTARY-AGED CHILDREN, PERHAPS A SINGLE BASKETBALL HOOP, BENCHES, GARDENS, SLOPES, SOFT NIGHT LIGHTING, TABLES FOR GAMES OR PICNICS, AND GARBAGE RECEPTACLES.

RECOMMENDATIONS

- Locate SHARED OPEN SPACE on commonly-used paths where adults and children walk to shops, recreation facilities, other play areas, and along the shortest route to school.
- Ensure that all dwellings have ready access to the space, either directly from the unit or via ground-level private open space (Cooper, 1975).
- Where possible (as in new housing design), ensure a ratio of building height to open space of 1:5 to 1:8 (Travel Report, 1978, p. 155).
- Because children are the primary users to outdoor areas, it is important to tie shared open space into a NETWORK OF PLAY spaces in residential housing complexes.

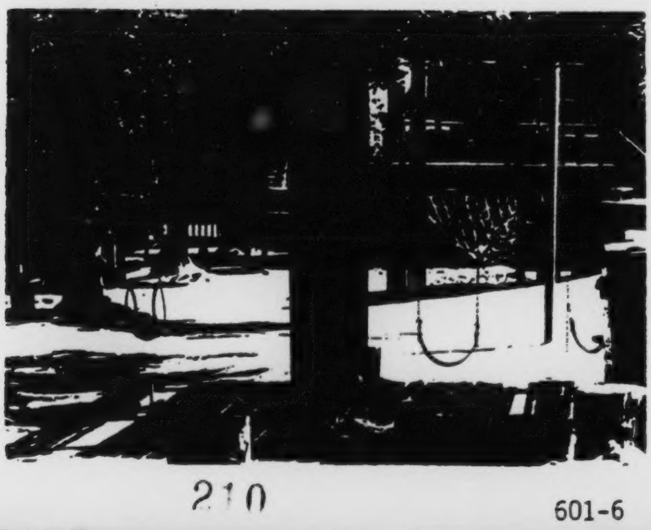
- Provide a hierarchy of open space (Alexander, Ishikawa, and Silverstein, 1977) by ensuring that all SHARED OPEN SPACES are looked upon by smaller spaces and in turn look out upon larger, more public spaces.
- Provide activity pockets (see HOME-BASED ACTIVITY POCKETS) enclosed at the edges and NESTS FOR QUIET PLAY.
- Consider the provision of benches and tables for adults' activities, as well as a variety of sitting places, walls, and slopes.
- Provide DEGREES OF SHELTER
- As "children will be attracted to safe, interior landscaped areas of Radburn-type layouts only if they find them more interesting play spaces than the surrounding roads or parking areas," (Cooper, 1975), ensure a variety of activities including INFORMAL PAVED AREAS; CHILDREN'S GARDENS, etc. (see COMPREHENSIVE PLAYGROUND).
- As "children in the active-group-play age range (5-10) prefer to play in moderately sized, spatially-enclosed outdoor areas; as supervising adults like to be able to oversee the whole of such an area from some place in the dwelling; /and as / the maximum distance for recognizing and hailing someone is c. 70 feet, . . . the maximum dimension of the common open space

should approximate this. Supervision by adults is facilitated if the space is roughly square or rectangular in shape," Cooper, 1975).

- Provide many vertical elements (Travel Report, 1978, p. 152), including fences benches, trees, platforms, garbage sheds, steps and slopes-- as well as the other variety of small spaces, changes in level, changes in surface, stair seats, bushes, plantings, colors, textures, basketball hoop, overhead elements, etc.

- Visual relief can be provided to open spaces by using surplus soil, dirt and stone mounds, and wind rows of trees and bushes. These elements with their ambiguous play qualities are especially appealing to children. Mounds, bushes, and rows of trees also provide protection from the weather and when combined with other forms of shelter,such as roof overhangs and walls, can greatly extend the seasonal use of play areas, (See FAVORABLE MICROCLIMATE).

RELATED ITEMS	NEIGHBORHOOD-BASED PLAY NETWORK OF PLAY COMPREHENSIVE PLAYGROUNDS FAVORABLE MICROCLIMATES CONTROLLED ACCESS VIEWS TO AND FROM PLAY AREAS INFORMAL PAVED AREAS HOME-BASED ACTIVITY POCKETS CHILDREN'S GARDENS NESTS FOR QUIET PLAY WATER PLAY AREAS PROTECTED SAND AND DIRT PLAY AREAS RETREAT AND BREAKAWAY POINTS DEGREES OF SHELTER



602 INFORMAL PAVED AREAS

ISSUE

THE STREET HAS ALWAYS BEEN A NATURAL PLAYGROUND FOR CHILDREN IN RESIDENTIAL AREAS. SOME FORMS OF PLAY NATURALLY REQUIRE HARD SURFACES IN ORDER TO TAKE PLACE SUCCESSFULLY. BUT A SURPRISING AMOUNT OF OTHER PLAY ALSO OCCURS ON HARD SURFACES.

JUSTIFICATION

Research by the Department of the Environment (1973) and by Vera Hole (1966) demonstrated that children spend a vast majority of their play time in places other than DESIGNATED PLAY STRUCTURE areas. The most popular places to play were streets and other paved areas.

> *The street has always been the natural playground for a town child, and it was not until the dominance of motor vehicles that it became transformed into a traffic preserve, exclusively. Street play, however, is with us as much as ever, even if the "playgrounds" are nothing less t than a danger to life. For lack of something better, children will still play in the street or car park. Among toys, the vehicle dominates to a greater extent than ever before, and they need a level surface. If the surface of the street is more suitable for this kind of play than the playing areas, it is easy to see where the child will be.* (Bengtsson, 1970, p. 188)

As Bengtsson suggests, with the dominance of wheeled toys, paved streets provide ideal smooth runways which are often more suitable and more expansive than those in parks and recreation areas. Hence, there is little incentive for children to stay out of the streets.

Numerous other studies have shown that a very large amount of children's play occurs on hard surfaces, even when extensive grassy areas are provided. One study, for example, found that 19% of children's activities occurred on grassy areas which comprised 44%

of the site, while 60% occurred on paved areas which comprised 50% of the site (Cooper Marcus, 1974).

On another front, sociological studies in urban residential areas, (Fried and Gleicher, 1961; Brower and Williamson, 1973) report that many low-income families often prefer the street-front portion of their dwellings to parks for the excitement, convenience, and social opportunities it affords. Parents can easily monitor their children's activities from inside, or they can sit on their front porch or steps to watch children play as well as socialize with passersby.

Neighborhood spaces have also been identified (Hester, 1975) as being important to the socialization process of young children. Brower (1973) and Cooper Marcus (1974) found passive observational activities of children to be a significant part of informal paved area play activities. Children can act out roled imitating others and test out new skills.

Many games require hard surfaces: wheel toys, hop scotch, roller skating, basketball, four-square, tennis; and even some traditionally soft-surface games like baseball and kickball are often played by children on hard surfaces. In addition, of course, the provision of some hard surfaces provides places for games in damp weather or by shoveling away snow.

In addition to planned hard-surface play areas, like basketball courts, favorite hard-surface areas include streets, footpaths and sidewalks, entrance ways, parking lots, and specially-designed hard-surface gathering areas like squares or courts.

In many housing areas,including the Radburn-style military installations visited, the parking lot and front curb area become favorite play spaces despite the housing planners' provision of landscaped interiors to the site (e.g., Department of the Environment, 1973). This can be interpreted as due to the lack of other more suitable hard-surface areas. One third of the hard-surface play at St Francis Square Housing Development (see Travel Report, 1978) was observed to take place on footpaths within the site. (Additional, but lesser amounts of play occurred on peripheral parking lots and perimeter sidewalks.)

Though children often gravitate naturally toward streets and informal paved areas, it may be that interior courst designed in the correct proportions and adequately provided with a variety of hard surfaces may attract even more play activity.

At both military installations and civilian sites visited, hard surfaces were observed to be well used for a variety of ball games (e.g., Fort Hood; the Irvine Comprehensive Playground; and the Mary B. Connolly Children's Playground; see Travel Report, 1978).

In a major book on the neighborhood as children's play spaces, Pollowy (1977) advocates that "streets should definitely be reconsidered and redesigned in view of their potential as children's play spaces" (p.155). Some communities have experimented with creating cul-du-sacs for children's play, blocking off other streets, and diverting traffic to make corners as play nodes.

Final arguments in favor of paved area plan and street play in particular are that it provides for play in all seasons, requires little maintenance, provides for a variety of experiences, and allows easy accessibility and mobility.

> *A playground consisting only of lawn is not enough to attract the children away from the street, as they cannot play on grass their everyday games such as hopscotch, marbles, hoops, ball games, riding tricycles and scooters. A playground without some hard surfaces of "play roads" and paved paths, which can serve as a substitute for roads, is insufficient. The hard surface must be kept clear of playground equipment so that action games are not hindered. All equipment, including walls for ball games, should be placed near the periphery.* (Lederman and Trachsel, 1968, p.11)

PATTERN

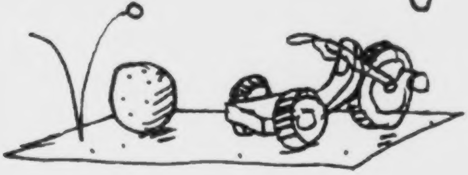
INFORMAL PAVED AREAS

PROVIDE A VARIETY OF PAVED AREAS FOR CHILDREN'S PLAY TO INCLUDE WIDE PATHWAYS, SMALL AREAS OFF THE CIRCULATION SYSTEM, "PLAY ROADS," AND HARD-SURFACE COURTS. PROVIDE SPECIAL HARD-SURFACE BALL GAME AREAS. DESIGN STREETS AND INTERSECTIONS WITH CHILDREN IN MIND. PLAN STREET PLAY ELEMENTS IN CONJUNCTION WITH DESIGNATED PLAY SPACES.

RECOMMENDATIONS

- All COMPREHENSIVE PLAYGROUNDS and NETWORKS OF PLAY should have a liberal amount of planned hard-surface areas for children's play. For reasons of providing also for unstructured, spontaneous, and quiet games which require different, softer settings, it would be unwise to create play areas which are predominantly hard-surfaced.

hard surfaces for wheel & ball & "street" play



- Hard surfaces, horizontal and vertical, must be designed as play areas for wheel toys, ball play, and other "street play" activities.
- Slopes included in paved areas are highly used (Bengtsson, 1970).
- Sidewalks and curb areas must be make safe for play: sidewalks should be widened; traffic lanes should be reduced and traffic speed cut down; suitable street front perches and sitting places should be provided; all spaces should be paved, well lit, serviced with occasional trash cans, and shaded from extreme winds and sun.
- Some streets or intersections (e.g., near play areas) may be blocked off at certain hours, for certain days, or even whole seasons, as play areas.
- Hard surfaces in play areas should be near the perimeter and linked visually with the street.
- For safety, wheel toy areas and paths should not over-run other paved play areas. Markings on pavement and natural barriers (e.g., steps) can discourage vehicle traffic.

- Places for watchers (e.g., curbs, steps) should be a part of paved play areas. If these can also let watchers see things going by on the actual street, so much the better. As suggested by Alexander, Ishikawa, and Silverstein (1977), steps can be particularly appealing for street watching if they give the viewer a vantage point, but are low enough to put them "in the action."

- Streets in housing areas can be planned to support both vehicle traffic and street play.

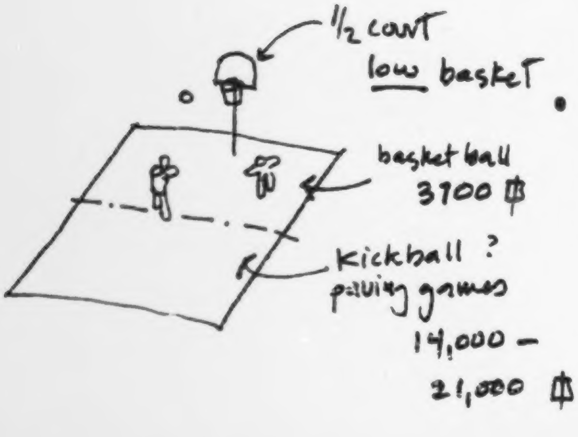
- Entries to residences must be planned to be amenable to doorstep play (e.g., small play yards for very young children right at the doorstep).

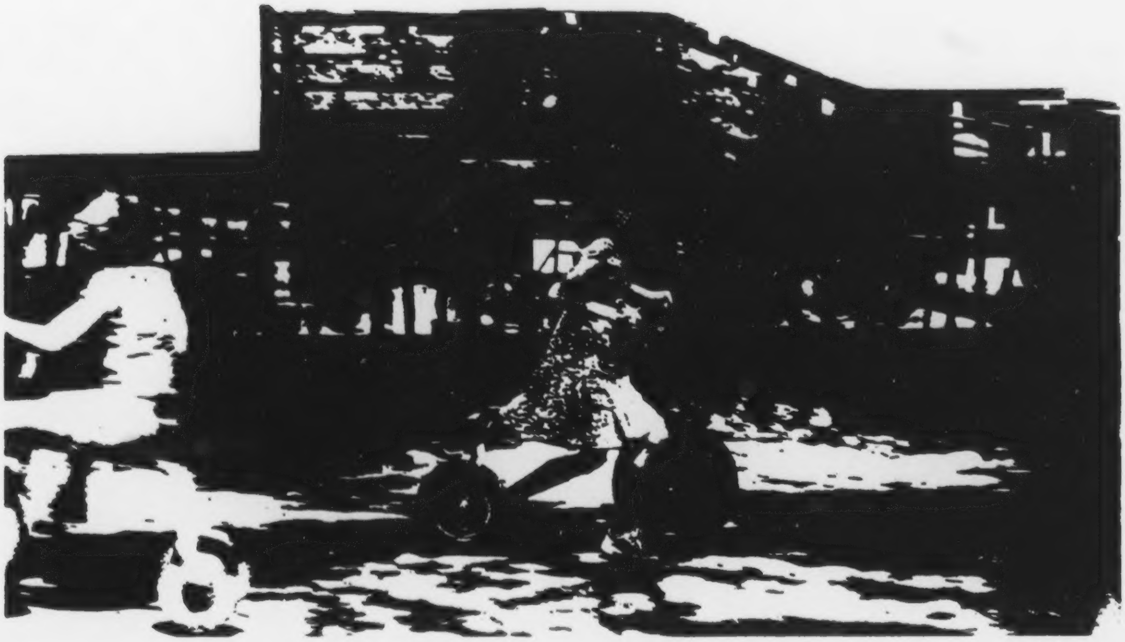
- Sidewalks in housing areas and in conjunction with NETWORK OF PLAY should be wide enough to accommodate wheel toy play as well as pedestrian movement. Sidewalks for movement and play can be as wide as thirty feet (Jacobs, 195), though fifteen- to twenty-foot sidewalks in the center of housing areas and ten feet on the periphery still allow for many activities. It is important, furthermore, that these sidewalks intermingle with other activities, are immediately convenient and interesting, and have minor crooks and irregularities to provide noods for various types of play.

- Court yards with partial-paved surfaces can be provided in the interior of blocks of housing. The best model we know of for this is St. Francis Square Housing Development (see Travel Report, 1978).

- Pedestrian paths or paved areas should be provided with good sight lines at all corners, intersections, and junctions with roads.

- The intersections between path and road systems should allow the free flow of activity of wheeled vehicles in particular; steps, high curbs, and railings should be avoided as much as possible.





RELATED ITEMS	NEIGHBORHOOD-BASED PLAY NETWORK OF PLAY COMPREHENSIVE PLAYGROUNDS SHARED OPEN SPACE HOME-BASED ACTIVITY POCKETS DESIGNATED PLAY STRUCTURES NESTS FOR QUIET PLAY

603 HOME-BASED ACTIVITY POCKETS

ISSUE

A GREAT DEAL OF PLAY, PARTICULARLY OF CHILDREN UNDER FIVE OR SO, TAKES PLACE CLOSE TO THE DWELLING ENTRANCE. WHEN THEY ARE PLAYING, YOUNG CHILDREN WANT TO BE WITHIN SEEING AND HEARING DISTANCE OF THEIR PARENTS OR OTHER ADULT CAREGIVERS, AND PARENTS TEND TO PREFER THIS TOO. AVAILABLE SPACES AROUND THE HOME SELDOM OFFER ADEQUATE OPPORTUNITIES FOR CHILDREN'S PLAY ACTIVITIES.

JUSTIFICATION

As they grow, very young children need to expand their indoor-oriented physical and social activities to include outdoor activities. Neighborhood parks and playfields are sometimes unsafe or inconvenient for small children to use. In addition, mothers may be housebound by responsibilities such as tending infants, cooking or housekeeping chores, and are unable to accompany their children to public recreational sites. If the immediate neighborhood is not secure from traffic or human dangers, parents have little choice except to require that their young children play at home.

Jane Jacobs (1961) stresses that spaces which accommodate home-based play are important not only for the play opportunities offered young children, but also for the informal social networks which may develop among adults, particularly home-bound adults such as young mothers and the elderly (see SHARED OPEN SPACES). In addition, the intensive use of outdoor space by neighborhood residents results in a safer atmosphere for young children who benefit from the intervention potential afforded by many "eyes on the street."

It is therefore important to provide protected pockets of space around and between dwellings which are visible from, but not part of, major circulation routes along streets and sidewalks. (see INFORMAL PAVED AREAS).

Favorite play places of this type for young children--and their parents--include: front porches; front sidewalks; nooks around trees and bushes; grassy slopes; recessed entry areas and entrance transitions; carports and driveways; gardens and other planted areas; doorsteps; and small courtyards or small fenced courts.

PATTERN

HOME-BASED ACTIVITY POCKETS

PROVIDE PROTECTED POCKETS OF SPACE AROUND DWELLING ENTRANCES AND AROUND AND BETWEEN DWELLINGS WHERE CHILDREN CAN PLAY, AND WHERE ADULTS CAN NATURALLY OBSERVE THEIR ACTIVITIES FROM INSIDE OF THESE DWELLINGS. MAKE THEM VISIBLE FROM, BUT NOT PART OF, MAJOR CIRCULATION PATHS ALONG STREETS AND SIDEWALKS. SCALE THEM FOR 1-3 CHILDREN.

RECOMMENDATIONS

- Provide attached porches 6 to 10 ft. wide, deep overhangs of at least 6 ft., or low walls with openings which small children can see through in order to create enclosures which do not isolate them from other neighborhood activities.
- Raised porches should be surrounded by a barrier which permits children to see other activities but which protects them from falling to the ground below.
- Recessed entry ways, carports, front steps, and front side-walks should be designed for children's play.
- Enclosed yards, porches, and other semi-private spaces should be highly visible from inside the home. Kitchen, den, or study windows overlooking these spaces allow parents to watch and hear their children while performing adult tasks.
- Provide a number of intimate nooks and crannies (see NESTS FOR QUIET PLAY) defined by natural vegetation and ground level changes.
- Provide a variety of materials such as grass, sand, gravel, wood, bricks, or concrete to accommodate a variety of children's play activities.
- Provide gentle slopes to offer opportunities for pushing and riding wheeled toys.
- Small pockets around or between houses or small apartment buildings can be created by separating them from the street with barriers such as level changes, low walls, plantings, mounds and varying material textures.

- A grouping pattern of small rowhouse units with closely-spaced and facing entrances makes it easy for a small group of children to play within earshot and eyeshot of parents.
- A few steps, benches, or a low wall permit parents or caregivers to sit to watch their children and to interact with other adults.
- Small courtyards or small, fenced courts with a combination of paved and natural surfaces, and perhaps with gardens and other loose dirt or sand in which play is permitted, make lovely children's HOME-BASED PLAY areas.
- All play spaces should be oriented to offer protection from the sun, wind, and rain (see DEGREES OF SHELTER).

RELATED ITEMS

NEIGHBORHOOD-BASED PLAY
VIEWS TO AND FROM PLAY AREAS
SEMI-ENCLOSED PLAY SPACES FOR YOUNG CHILDREN
DEGREES OF SHELTER
SHARED OPEN SPACE
INFORMAL PAVED AREAS
CHILDREN'S GARDENS
NESTS FOR QUIET PLAY
PROTECTED SAND AND DIRT PLAY AREAS
LANDSCAPING MATERIALS

604 OPEN GRASSY PLAY AREAS

ISSUE

PROVISION OF AREAS FOR PICK-UP SPORTS IS AN INTEGRAL PART OF ANY COMPREHENSIVE CHILDREN'S PLAYGROUND PLAN.

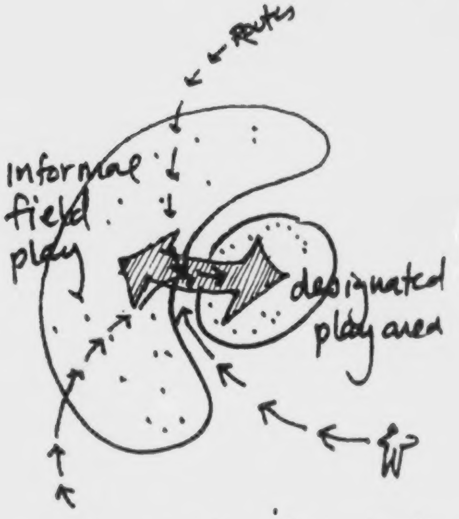
JUSTIFICATION

Pick-up games, informal sports, and large-group play are integral parts of the full range of children's outdoor play behavior, and can engage children for long and fun-filled hours.

In addition to their obvious benefit for gross motor and perceptual-motor development, team games also encourage children to develop social skills of communication, cooperation, and and competition.

Formal sport fields for organized, league play are outside the scope of this design guide, but informal playing fields for pick-up games, practice, and informal sports are an important part of any comprehensive children's playground plan.

Football, basketball, and baseball are popular children's outdoor sports, though at many elementary schools informal baseball is declining relative to kickball. Soccer and tennis are rapidly increasing in popularity, and communities are asking for new or expanded facilities for these games.



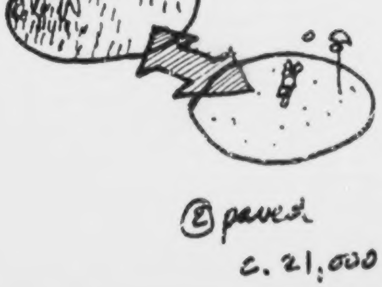
relationsip of informal play fields to other activities

PATTERN

OPEN GRASSY PLAYING AREAS

PROVIDE AN OPEN, GRASSY, MULTIPURPOSE PLAYING FIELD FOR SOCCER, FOOTBALL, AND BASEBALL. SCALE ALL OF THESE TO ELEMENTARY-SCHOOL AGE CHILDREN'S NEEDS, NOT REGULATION LEAGUE ACTION.

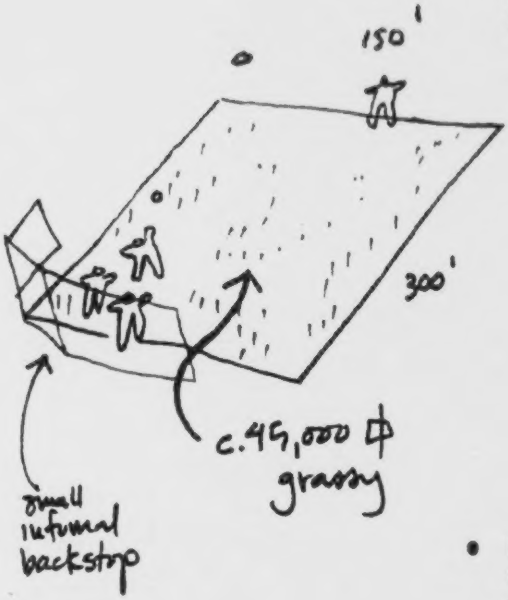
① grassy
c. 45,000 $



② paved
c. 21,000 $

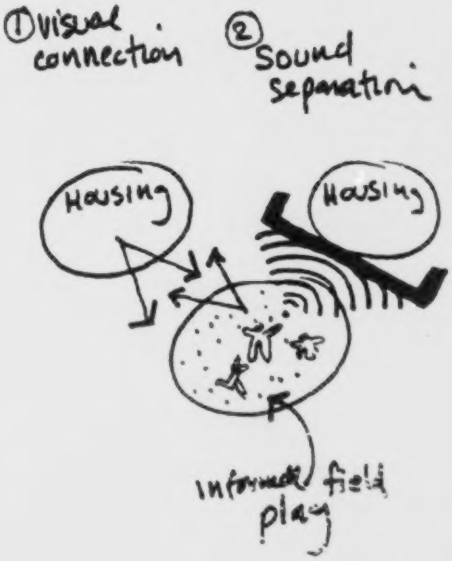
RECOMMENDATIONS

- Whereas league football and soccer require upwards of 75,000 sq. ft. (almost 2 acres) including end zones and side lines, a reasonable size for a children's open playing field should be approximately 45,000 sq. ft (one acre). Minimum size for children's informal soccer would be 300 ft. x 150 ft.


150'
300'
c.45,000 □
grassy
small informal backstop

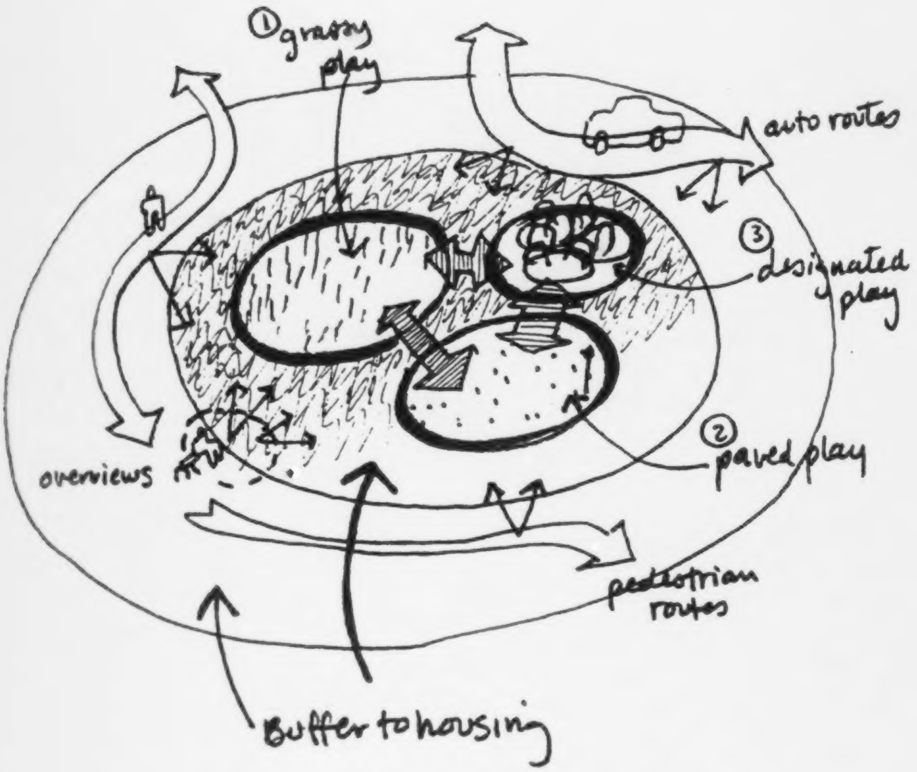
- Provision should be made for length to end to end games and for 2-3 games across, and for an informal baseball diamond and backstop at one end corner.

- Site the open playing field so that noise will not carry to surrounding houses, yet place it in the middle of the action, perhaps in an open area between two proximal housing complexes.


① visual connection
② sound separation
Housing
Housing
informal field play

- Ring the playing fields with hedges, bushes, and tall grasses to provide NESTS FOR QUIET PLAY.

- Provide benches and grassy knolls nearby all areas for onlookers.
- In northern climates make at least one of the outdoor areas flat and depressed for flooding for winter skating; consider a warming house and storage for snow scraping equipment nearby (which might double-function with an adventure playground summer hut).
- Provide OUTDOOR STORAGE.


① grassy play
auto routes
③ designated play
② paved play
overviews
pedestrian routes
Buffer to housing

RELATED ITEMS	COMPREHENSIVE PLAYGROUNDS FAVORABLE MICROCLIMATES VIEWS TO AND FROM PLAY AREAS HARD-SURFACE PLAYING AREAS LANDSCAPING MATERIALS TO FIT ACTIVITIES OUTDOOR STORAGE

605 HARD-SURFACE PLAYING AREAS

ISSUE

PROVISION OF AREAS FOR SPORTS IS AN INTEGRAL PART OF ANY COMPREHENSIVE CHILDREN'S PLAYGROUND. CHILDREN GRAVITATE TOWARD HARD-SURFACE PLAY AREAS AND REQUEST HARD SURFACES FOR IMFORMAL BALL GAMES.

JUSTIFICATION

Pick up games, informal sports, and large-group play are integral parts of the full range of children's outdoor play behavior, and can engage children for long and fun-filled hours.

In addition to their obvious benefit for gross motor and perceptual-motor development, team games also encourage children to develop social skills of communication, cooperation, and competition.

There are other behavioral considerations which are often overlooked, but which have importance in deciding where to site and how to lay out games areas. An important conclusion from one of Clare Cooper's (1975) studies of housing design and children's outdoor needs, is that teenagers like informal gathering places where they can "watch the action." Teenagers and preteens like to socialize, flirt, show off, and see and be seen by their peers. This is often the hidden agenda for boys' basketball and for girls "casually" passing by the basketball area. When informal sports are not in the center of the action, they are often underutilized or even abandoned.

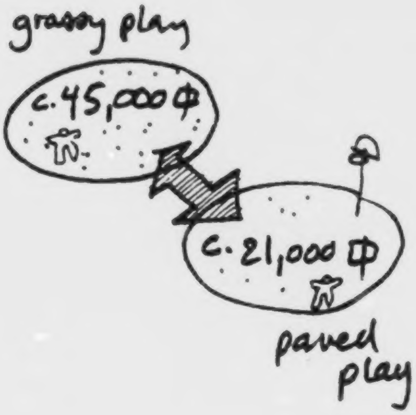
PATTERN

HARD-SURFACE PLAYING AREAS

PROVIDE OPEN, HARD-SURFACE AREAS FOR BASKETBALL, KICKBALL, AND TENNIS.

RECOMMENDATIONS

- Provide hard-surface playing areas for basketball, kickball, and tennis. For children, these should be approximately 3,700 sq. ft. for basketball; 14,400 sq. ft. for two tennis courts; and 14,00-21,000 sq. ft. for kickball area.



- Site the hard-surface areas, especially the basketball and tennis areas, so they are centralized and visible without intruding on other activities, so they are in the center of the action, perhaps adjacent to a central housing parking lot.
- Provide benches and grassy knolls near by all areas for onlookers.
- Provide VIEWS TO AND FROM other activity areas.
- Basketball, tennis, and other hard-surface areas should be well-lit enough for night-time use without the lighting being so bright as to disturb neighbors.
- Provide OUTDOOR STORAGE.

RELATED ITEMS	COMPREHENSIVE PLAYGROUND OPEN GRASSY PLAY AREAS VIEWS TO AND FROM PLAY AREAS FAVORABLE MICROCLIMATES OUTDOOR STORAGE LANDSCAPING MATERIALS TO FIT ACTIVITIES

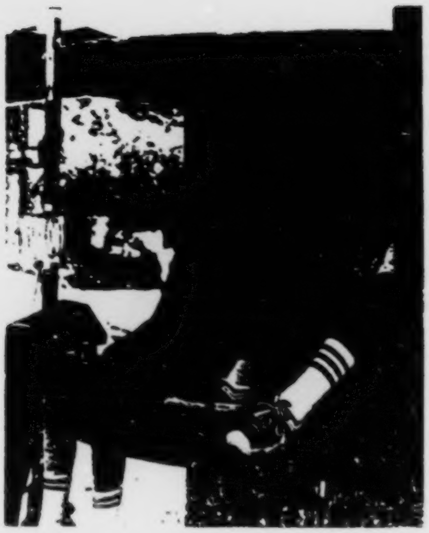
606 ADVENTURE PLAY AREAS

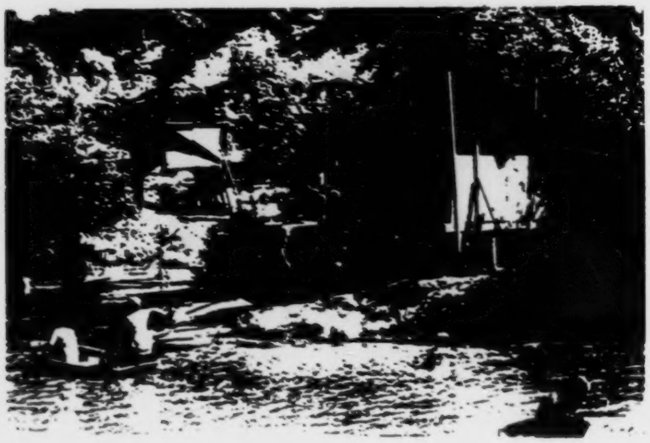
ISSUE	PROVIDING PROGRAMS AND SETTINGS WHICH INTEGRATE COGNITIVE, SOCIAL, AND PHYSICAL PLAY IN A FREE AND EXCITING ENVIRONMENT.

JUSTIFICATION

Adventure play has been described in Part I of this document. The numerous sources on adventure play (e.g., Lady Allen, 1968, Bengtsson, 1974, Cooper, 1970, etc.) all agree that adventure play programs fulfill more of children's play needs than any other single type of play program. Observation and interviews by team members showed that when children have the choice, they prefer adventure play to any other type (Travel Report, 1978).

Research by Hayward, Rothenberg and Beasley (1974) showed that, given the choice, more school-age children use adventure playgrounds than all other types of playgrounds combined. Further, the vast majority came at least one (and usually more) time per week, and this decision to come was made on their own (vs. having an adult decide as was the case for the majority of children at other play areas). Also, children tended to stay more than twice as long at adventure playgrounds as any other type (75 minutes vs. 21 and 32 minutes).





As Robin Moore (1974) says:

> *The opportunity for children to shape their own environment is fundamental to their healthy development and is the only way to ensure them adequate choices to meet their diverse needs.* (p. 641)

The most necessary elements for adventure play are 1) a site, 2) a playleader, and 3) junk. Other things which are useful include a telephone for locating and soliciting more junk, water for play, plants and clean-up, tools of a reasonable quality, toilets if none are available nearby, electricity for lights and equipment, a hut for leaders, tool storage and rainy day play, and the obligatory solid fence to screen the "messiness" from housing areas.

European adventure play areas have been operating very successfully for years. A few have been established in the U.S. with enthusiastic response from children and some resistance from adults. Because adults may see adventure play areas as chaotic blots on the landscape, designers must pay special attention to siting and creation of visual barriers (Cooper, 1975). The siting of Irvine Adventure Playground (see Travel Report, 1978) is instructive.

Other design considerations include unloading zones for trucks delivering "junk" separate from children's entrance, storage for equipment, tools, etc., and a safe open space for fires (CMHC Pit 2).

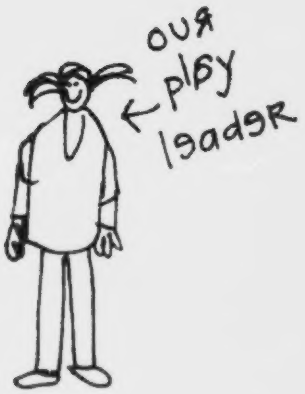
PATTERN

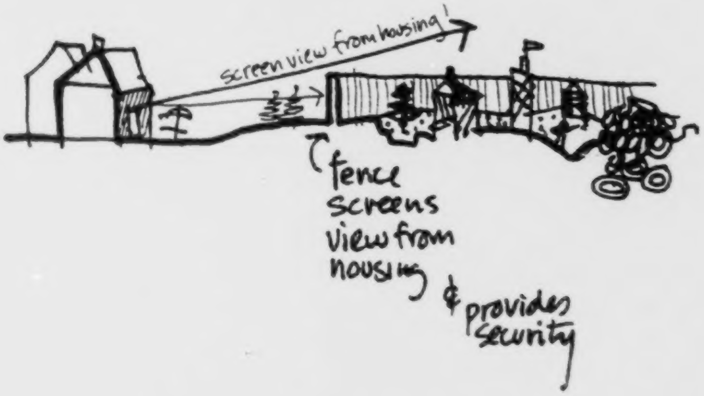
ADVENTURE PLAY AREAS

AN ADVENTURE PLAY PROGRAM SHOULD INCLUDE A LEADER, A FENCED AREA, UTILITIES AS NEEDED, AND PLENTY OF JUNK MATERIALS.

RECOMMENDATIONS

- Adventure play should be available to all children within distances prescribed in "TYPE AND LOCATION."
- Adventure play areas must have (a) play-leader(s).
- Adventure play must be screened from view when near housing, by fences which can be locked if necessary for safety reasons.




screen view from housing!
fence screens view from housing & provides security

- Adventure play areas should have two separate entries--one for children, one for vehicle unloading.
- Lockable, weatherproof storage for equipment is essential.
- Utilities should include electricity, water, and phone if at all possible.
- If a leader's hut is constructed, it will help extend the adventure play season. Allow children and adult volunteers to be involved in building this as a first project.
- Size of adventure play area will range from 1/3 to 1½ acres depending on use and number of children available to use it (Pollowy, 1977, Allen, 1968).

607 CREATIVE PLAY AREAS

ISSUE	CHILDREN, EVEN THE VERY YOUNG, NEED TO BE ABLE TO MANIPULATE AND FORM THEIR OWN ENVIRONMENT, TO DISCOVER THEIR OWN CAPABILITIES AND STRETCH THEIR IMAGINATIONS.
JUSTIFICATION	As has been stated in ADVENTURE PLAY AREAS, adventure play satisfies more play needs--cognitive, social and physical--than any other single type of play area.

But many parents may feel uncomfortable having very young children use tools, nails, rough lumber, and other LOOSE PARTS prevalent on adventure playgrounds.

An alternative to adventure play for very young children is the creative playground. This type of playground began in Sweden and included pre-designed LOOSE PARTS which, without nails, could be put together in numerous combinations to form play houses, climbing structures, and anything else a child might imagine (see Allen, 1968; Rock, 1975). Imagine giant tinker-toys or huge lincoln logs, and the type of building experience available in creative playgrounds becomes apparent.

The only creative playground to date on the North American continent exists at Harbourfront in Toronto. It is built in conjunction with the adventure playground there.

A playleader, a storage hut, and LOOSE PARTS are all that is needed for a successful playground. Staff find that most children separate themselves by age--older school-age children to adventure play, younger pre-school children to creative play.

To adults, creative playgrounds have the advantages of added safety and neatness, as all loose parts are put away at night.

From a description of William Rock (1975), the originator and landscape architect of the Harbourfront Creative Playground:

> *Creative-play also provides an opportunity for children to manipulate their environment to achieve their own ends and to sense that the world around them can be changed and need not be taken as given.*
>
> *Opportunities for adults to interact and socialize while watching children play with their peers were also provided. This is an important part of the concept as most, if not all of the children of this age group (preschoolers) are brought to the play area and supervised by older children, parents, or other adults.*
>
> *Play-leaders are essential to the operation of a creative playground. Their main task is to encourage the child's creative ability at the restraint of their own. The play-leader in this context is a facilitator helping children in their play and providing a fertile environment full of loose materials and opportunities for change, experimentation, and discovery.* (p. 8)

PATTERN

CREATIVE PLAY AREAS

CREATIVE PLAY AREAS REQUIRE PRE-DESIGNED LOOSE PARTS, STORAGE, AND A PLAYLEADER. THEY SHOULD BE LOCATED WHERE THERE IS A CONCENTRATION OF YOUNGER CHILDREN.

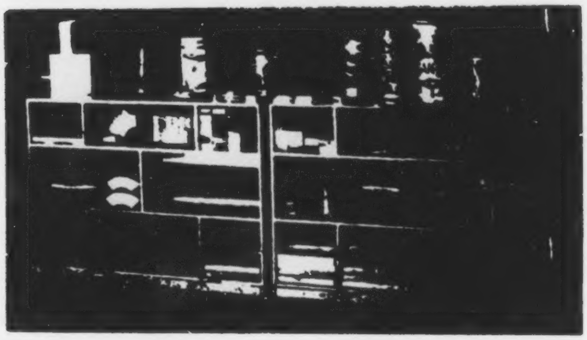
RECOMMENDATIONS

o Creative play areas must have a qualified playleader in attendance when open.

o It is advisable, though unlike adventure play areas, not mandatory to have the site partially enclosed.

o Creative play areas must have a large lockable storage shed accessible to children during open hours. Provide a raised doorway which will not be blocked by snow and ice.

o Provide sand as a good base for building and LOOSE PART when dampened.



- Provide a water source to add bonuses in building, arts and crafts, and sand play.

- Design and construct large-scale modular parts. Examples would include cubes, solid rectangles, ladders, planks, rounds, much like an oversized set of child-care center unit blocks. They should be made of a light durable wood, should be constructed without nails, should be finished with a non-toxic polyurethane, and will need to be refinished annually (resanding and resurfacing).

- Creative play areas are ideal in conjunction with child-care centers, preschools and kindergartens, and should be an integral part of COMPREHENSIVE PLAYGROUNDS and community NETWORKS OF PLAY.

RELATED ITEMS	NETWORK OF PLAY COMPREHENSIVE PLAYGROUNDS SEMI-ENCLOSED PLAY SPACES FOR YOUNG CHILDREN ADVENTURE PLAY AREAS LOOSE PARTS OUTDOOR STORAGE

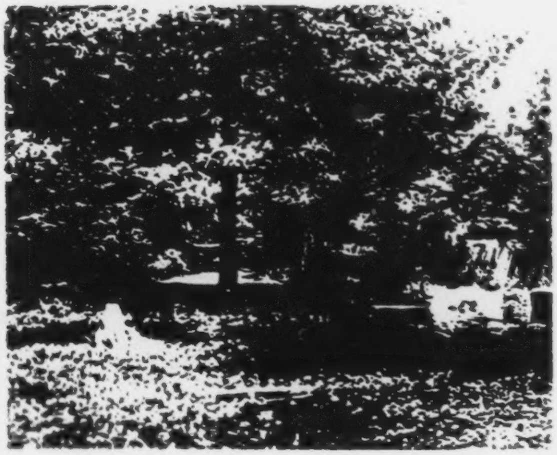
ISSUE	CHILDREN MUST EXPERIENCE NATURAL ELEMENTS IN ORDER TO DEVELOP A CONCEPT OF THEIR ROLE IN THE ECOLOGY OF THE EARTH.

JUSTIFICATION

In studying the child's conception of the world, Piaget (1967) discovered through interviewing children that non-rural children view the natural elements of the world as person-made. Despite where they live, children must develop an understanding of natural processes. Children in urban, suburban, and town areas may take longer to form the concept of a natural order and the natural world which exists independently of people's control. Children who don't have this concept are then unable to appreciate the needs of plants and animals and therefore cannot really understand their own places in the ecology of the world. Children must begin to experience life forms other than human beings in order to develop a conserving attitude toward nature.

Studying a prototypical natural environment area for children in Berkeley, California, we observed the following:

> *At Washington Environmental Yard, children have learned about ecological cycles and principles which they might never have learned from books. They have been provided with tremendously imaginative play areas which a concrete or wood structure playground could never provide. As one parent said, "The range of play and environmental education available are much richer than they can get elsewhere." The children have learned, as one boy said "how to respect natural systems. We used to break off limbs, but now we understand how to enjoy nature, how it is, how it grows, and how to take care of it so it won't die."* (Travel Report, 1978, p. 166)



Robin Moore, creator of Washington Environmental yard, writes:

> *My concern is the physical environment in which children play and grow up--and the extent to which it allows for the realization of their full potential as humane individuals.*
>
> *Nature's overwhelming diversity is its single most important offering to men.* (Moore, n.d., p. 46)

During observations of children in Wilmington, Vermont, Roger Hart (1973) became aware of the critical importance of natural environments:

> *The need to feel effective as an agent of change is another strong factor in the healthy development of a child. Compared to the complex and ever-changing world of people, the natural environment remains relatively stable. A child can immediately see the transformations that he has effected. I have observed that children from about the age of three freely and frequently modify the environment if there are suitable areas available.* (p. 67)

Hart also saw evidences of the value for social development for children using the natural environment:

> *I have observed cooperative play to be particularly encouraged when sand or dirt (ideally with water) is available as a play medium. A recent project on the sandbank behind the local elementary school engaged as many as thirty children under nine years of age in the building of an eleborate stream system. . . . Such social cooperation among peers is unknown in conventional playgrounds.* (p. 69)

Miller (1972) also theorizes about the relationship between early experiences with nature and later responsibility towards it:

> *Children and youth in the natural outdoor environment are exposed to a wealth of play and learning opportunities. They don't need devices;*

> *they make their own play equipment from the many natural resources at hand. But all the natural things--trees, streams, boulders, and grassy hillsides--provided by nature are disappearing. Gone are the many of nature's provisions for youngsters' play. The object of the creative outdoor play area, is in part, to highlight or feature some of the resources of the natural rural outdoors in a man-made environment. Special attention must be given to the design of urban play areas to make up for the loss of trees to climb, streams in which to cool hot dusty feet, and stone walls upon which to walk and balance.*
>
> *There is a direct relationship between knowing the outdoors and appreciating it. There is a direct relationship between appreciating the outdoors and protecting it and improving its quality. Youngsters who grow up playing in the outdoors in a variety of outdoor settings and learning about it will be children and eventually adults who will seek to preserve and improve the outdoors for themselves and others. These children and adults will be concerned about pollution, overpopulation, extinction of animal and plant species, and other problems.* (p. 14)

Grady Clay (1969) reports on a research study conducted by Lukashok and Lynch (1959) which was based on the assumption

> *"that present adult memories reflect actual childhood preoccupations." Or--that memories of childhood are important emotional underpinnings of modern man's life, and are to be laughed away or disregarded at our peril and great loss.* (p. 134)

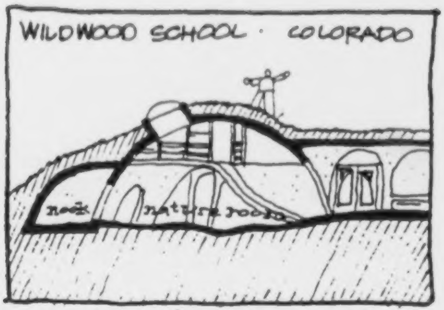
Their findings show:

> *These people remember most vividly those elements of their childhood which involved landscape--lawns and pavement surfaces, foliage, woods and green hills, and water in the landscape.* (p. 134)

Another reinforcement of the theory that early experiences with nature are guidelines for future behavior was found in a comparative study by Bannerjee and Lynch (1977) of the spatial environment of adolescent people in several cultures. One finding was that "natural-pastoral values dominated children's preference for future living environments regardless of their present setting" (p. 114).

Joseph Lee, known as the "Father of the Playground Movement," once made a list of facilities he wished every child could have. This list includes:

> *Winter and summer woods, climbing trees (one fitted with ropes).*
> *Ponds to skate on, also a flooded marsh running far in among the trees.*
> *The stars, moon and sunsets appurtenant to these.*
> *A cow pasture and other playing fields.*
> *Several barns with horses, cows, pigs and smells appropriate thereto . . . .*
> (in Butler, Pioneers in Public Recreation, 1965)



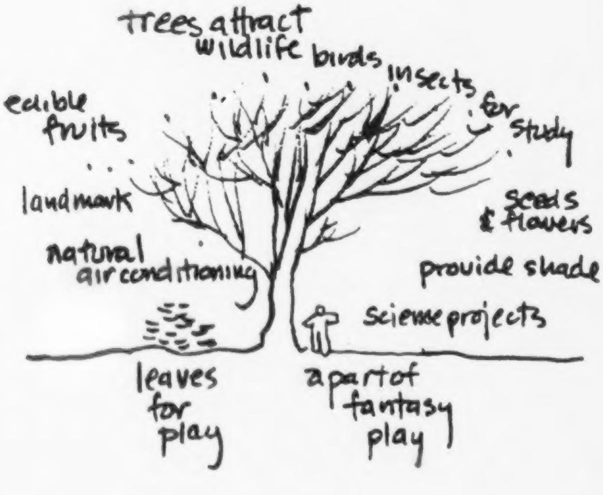
nature room & rook

Children use these natural facilities very successfully as seen in the Washington Environmental Yard and the Wildwood School near Aspen, Colorado, which was designed by Robert Lewis. The creation of these areas was unique in that Washington Environmental Yard was developed from a black-topped school yard and that Wildwood School was placed underground to help preserve the pre-existent natural environment. Both of these approaches to providing natural areas for children demonstrate interesting challenges to designers.

Some natural elements to be considered in the design process include water, sand, dirt, land formations, fire, rocks, plants (cultivated and wild), animals (domestic and wild), bushes, and trees. (Patterns on PROTECTED SAND AND DIRT PLAY AREAS; WATER IN THE LANDSCAPE; SUPERVISED FIRE AND COOKING AREA; FENCED ANIMAL AREA; CHILDREN'S GARDENS; PLANTING AND GROUND SHAPING; and ADVENTURE PLAY AREAS will follow.)

Trees are very special plants. Roger Hart (1973) found:

> *The natural environment offers a wealth of play potential for young children, with trees and small patches of water the most valued elements. One tree can engage a child for days at a time, or periodically, over a span of years. Manufacturers of playground equipment have found it impossible to recreate such richness. The children of Wilmington demonstrated to me that there are countless routes up "a good climbing tree;" many notches, cracks, or rough spots can be used, depending upon the child's desire for challenge at any time. Any kind of bush or tree allows children to exercise great creativity in the construction of houses, forts, tents, and imaginative laboratories. A mature tree is excellent, of course, for hanging a rope swing and has the added attraction of a host of insects.* (p. 69)



the value of trees for play

trees attract wildlife
birds
insects for study
edible fruits
landmark
seeds & flowers
natural air conditioning
provide shade
science projects
leaves for play
a part of fantasy play

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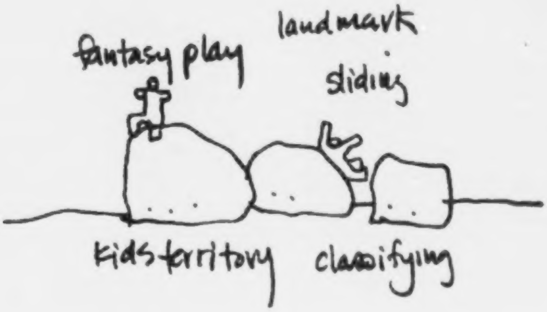
Other values of trees:

- Trees provide shade.
- Trees become part of fantasy play.
- Trees provide leaves to play in in the fall.
- Trees provide natural air conditioning in hot weather through transpiration.

- Trees attract wildlife, birds, insects, squirrels, etc.
- Trees may flower and seed--providing more playthings.
- Trees provide edible fruits and nuts.
- Trees may easily be classified and differentiated by children. (Washington Environmental Yard has over 100 different kinds of trees.)

the value of rocks for play



Rocks and land formations have many of the same climbing, sliding, classifying, weather-protective values as trees.

> *Natural geological formations or topographical features of the play site should be used and capitalized upon for a quality play environment. In cases where a site has not yet been selected, the topography of varied areas under consideration should be an important criterion for final determination of the site.*
>
> *When a play area has been in existence for a long time, and then the site is devoid of interesting and worthwhile natural features and formations, efforts to improve the area should include plans to restore or create topographical features.* (Miller, 1972, p. 32)

PATTERN

ENVIRONMENTAL YARDS

ENVIRONMENTAL YARDS SHOULD BE AVAILABLE TO ALL CHILDREN, PREFERABLY IN CONJUNCTION WITH CHILD-CARE FACILITIES AND ELEMENTARY SCHOOLS, BUT ALSO ACCESSIBLE AT ALL HOURS TO THE FULL COMMUNITY OF CHILDREN (INFANTS TO PRE-TEEN-AGERS) AND ADULTS. THESE AREAS SHOULD COMBINE PLAY WITH A DEVELOPING AWARENESS OF NATURAL CYCLES AND ECOLOGICAL BALANCE.

RECOMMENDATIONS

- When a rich natural area including varied topography, trees, wild plants, insect and animal life exists in the siting area, preserve and enhance that area as a special feature.

- Create small access points while protecting the area with some type of barrier. Where no natural area exists, create one using Washington Environmental Yard as an example of what can be done in a very short time.

- Choose plantings which have value for wildlife, for play potential, for fruit and nut production.
- Provide ways children can see plants' and animals' total life cycle in the natural state: seedling beds, glass-sided ant hill or bee hive, water cycle demonstrations, etc.
- Coordinate natural area parks with schools. Schools can use them as integral parts of their curriculum and can help in maintenance and development.

RELATED ITEMS

CHILDREN'S GARDENS
FENCED ANIMAL AREA
PROTECTED SAND AND DIRT PLAY AREAS
WATER IN THE LANDSCAPE
SUPERVISED FIRE AND COOKING AREA
PLANTING AND GROUND SHAPING
ADVENTURE PLAY AREAS

609 CHILDREN'S GARDENS

ISSUE

CHILDREN NEED TO RELATE DIRECTLY TO THE NATURAL WORLD AND LEARN THROUGH THE EXPERIENCE THAT THEY HAVE A PLACE IN THE ECOLOGICAL WHOLE.

JUSTIFICATION

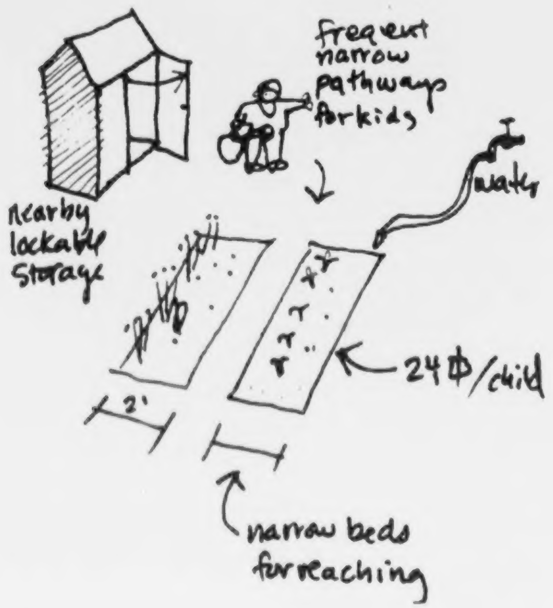
> *Natural resources such as water, vegetation, dirt and small animals offer kids unique opportunities for exploration, sensory stimulation and learning, that cannot be provided by man-made materials.*
> (Childhood City Newsletter, 1977)

In studying the child's conception of the world, Piaget (1967) found that even children who knew that plants grow from seeds were less knowledgeable about where seeds come from. Children theorized that they "come from the store," "a man makes them," etc. Children need to experience the entire life cycles of plants, to understand that humans are only part of a larger whole, and that the entire world is not man-made.

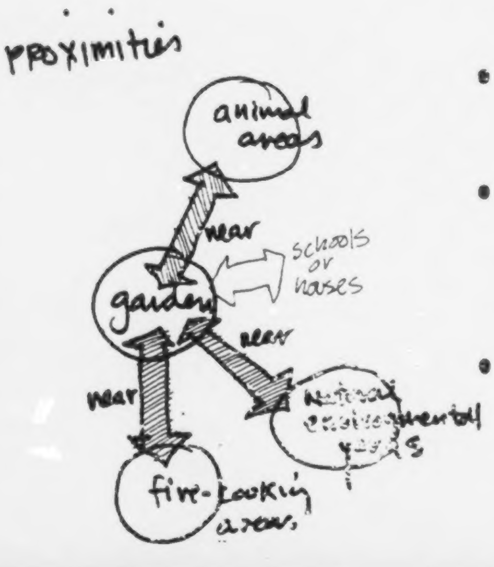
This experience can be gained through the use of gardens. Gardening helps children develop a sense of appreciation for nature and for growing things. They learn to classify plants as being food, flowers, weeds, etc. They learn about processes and sequences of growth. Habits of observation are developed and there is an awareness of the time element as differences in growing times of different plants are observed. Children become aware of the texture, color, moisture, content, and density of different soils. They learn to measure distances while laying out plots and planting rows. They learn cooperation and develop a sense of group responsibility when using tools and also discover that specific tools have specific uses and need to be handled safely.

gardening as a play activity

maximum per child is an appropriate size (Miller, p. 71).


frequent narrow pathways for kids
nearby lockable storage
water
24 ф/child
2'
narrow beds for reaching

radishes
beans
lettuce
rapid growing vegetables


proximities
animal areas
near
schools or houses
garden
near
near
natural environmental areas
fire-cooking areas

- Plots should be able to be shared or used by an individual (Lady Allen, 1968).
- Rapid growth vegetables (e.g., lettuce, radishes, beans, etc) are especially rewarding choices (Central Mortgage and Housing Corporation, 1978).
- Storage for tools should be adjacent and lockable.
- Garden areas should be near animal areas to demonstrate most clearly the interdependence of plants and animals.
- Garden areas may be near fire/cooking areas to emphasize the uses of plants by people.
- Garden areas may be near wildlife "natural" areas to emphasize distinctions and similarities between wild and domesticated plants, pollination and seeding of both, uses of both, etc.
- In some climates, for children to participate in the entire life cycle of plants, a greenhouse area should be provided. Though it need not be, this may be in conjunction with child-care or other school facilities.

Lady Allen suggests another value to gardens:

> *One of the great advantages of having a garden in a playground is that it gives the children a continuous, constructive interest. From the age of five to twelve, or sometimes even later, they have an instinctive desire to grow someting, be it food, flowers, or pets. There is much talk about discipline. The discipline of the seasons, the weather, the type of soil and its feeding are valuable in showing children that they must obey certain rules in order to get results--and results are what they want.*

Since gardening must have adult supervision for children's enjoyment, garden spaces must be planned where such supervision is possible. Alexander, Ishikawa, and Silverstein (1977) suggest plots for family gardens near living spaces where parents and children can garden together and harvest at home. The Pacific Oaks College Children's School includes a garden as part of the outdoor play yard (Travel Report, 1978).

PATTERN

CHILDREN'S GARDENS

IN ADULT SUPERVISED AREAS, CHILDREN SHOULD HAVE THEIR OWN GARDEN PLOTS TO EXPERIENCE PLANT GROWTH, CARE, AND PRODUCE. SOME WILDLIFE PLANT AREAS COULD ALSO BE AVAILABLE IN NON-SUPERVISED PLAY AREAS.

RECOMMENDATIONS

- An area should be provided for children to grow flowers and vegetables. Some of these plants could be used to feed any animals which may be kept at supervised garden/animal areas.
- The garden area should be divided into small plots for each child to grow things.
- Gardening plots for children should be broken up with walkways to allow safe passage through them (Sutcliff, 1976).
- Plots should be no more than 2 ft. wide to allow children to reach without walking on plants (Central Mortgage and Housing Corporation, 1978). Twenty-four sq. ft.

610 FENCED ANIMAL AREAS

ISSUE

THE INTERACTION OF CHILDREN WITH PLANTS AND ANIMALS ALLOWS THEM TO GAIN KNOWLEDGE, UNDERSTANDING, AND APPRECIATION OF LIVING THINGS. CONTACT WITH ANIMALS MAY ALSO PLAY A VITAL ROLE IN A CHILD'S EMOTIONAL DEVELOPMENT.

JUSTIFICATION

In studying the child's conception of the world, Piaget (1967) discovered that the clear connection adults perceive between animals and animal products is lost to children. Connections between chicken-egg, cow-milk, bee-honey are not readily apparent to a child who has little or no experience with these particular animals. Children who take the perspective of the entire environment as being man-made, have lost their essential link with the surrounding environment which they must eventually rely on and conserve.

Children, however, do appreciate the value and wonder of animals as an intrinsic part of the world. As their experience with animals increases, children become aware of likenesses and differences between animals and begin to classify them in appropriate groups. Children learn that other living creatures may depend on their actions. This leads to a sense of responsibility and feelings of tenderness and love. Animals may be less demanding than the humans they know.

Robin Moore, in surveying children at Washington Elementary School, Berkeley, found that children mentioned an amazing number of organisms they liked which may be called "wildlife:" birds, butterflies, gophers, snakes, ants, ladybugs, beetles, salamanders, mice, turtles, frogs, fishes, etc. "I'd like to see animals, 'cause I just love animals. . . ." wrote one girl.

Another value which experience with animals can give to children is the chance to love and care for a being which has no authority over them. Alexander, Ishikawa, and Silverstein (1977) cite evidence which suggests that children who have difficulty relating to other people can relate to and love animals, and that this can in turn help them respond to people again.

Bengtsson (1970), Miller (1972), and Lady Allen (1968) all mention the positive values for children of contact with animals. Miller suggests a children's farm where children can see the entire life cycles of useful domestic farm animals. Lady Allen suggests animals in residence at supervised playgrounds and also (alternately perhaps) a travelling petting zoo in the summer. Bengtsson recommends animals but cautions:

> *If a playground is to be equipped with animals, a fundamental condition must be that their well-being is guaranteed. . . . According to experiments made in various playgrounds, this does not seem to pose any problem . . . but it should not be assumed that their upkeep is to be left entirely to the children. . . . Supervision is still essential.* (pp. 168-169)

PATTERN

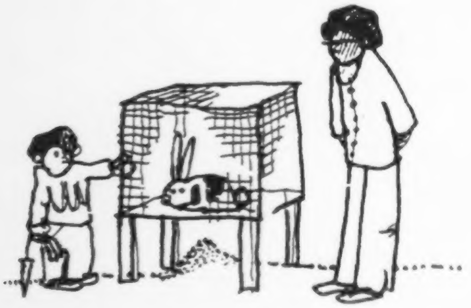
FENCED ANIMAL AREAS

PROVIDE FENCED AND PROTECTED AREAS FOR CHILDREN TO FEED AND CARE FOR ANIMALS

RECOMMENDATIONS

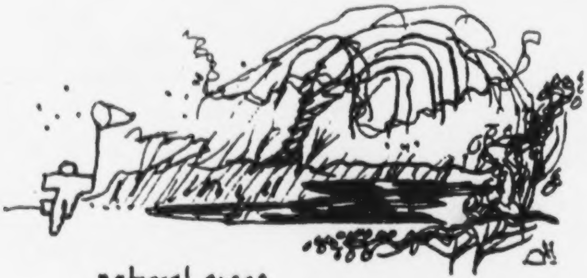
- A supervised area should be provided in which children can come into contact with animals.
- Rabbits, sheep, goats, guinea pigs, and other tame animals should be provided.
- Provisions should be made for the proper care of the animals including care during weekends and vacations. The thorough cleanliness of pens, cages, and the animals themselves should be supervised, but their upkeep should be left to the children, if possible.
- Animals should be contained in locked cages or in an enclosed courtyard to protect them from vandalism.
- A contained area should be provided that allows a child to capture an animal easily and then play with it.
- Design child-sized hutches which protect smaller animals from the weather and yet provide easy viewing and access to children.

kids + animals + supervisor



- Disturbances caused by contact with animals should be minimized. They should be kept out of main circulation paths in a quiet part of the outdoor play area, and given private spaces away from children.

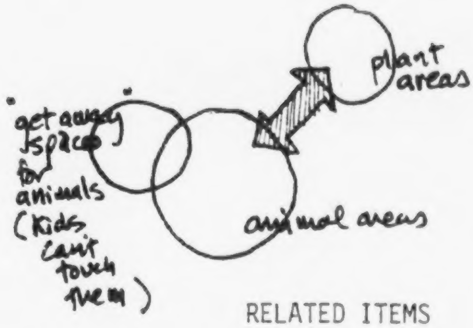
- Plan animal hutches, watering places, etc., within a fenced and protected area, with easy access to children and on children's natural paths through the community.



natural areas
especially thickets & ponds
will attract small
creatures

- Plan areas where wildlife will thrive and where children can observe ants, snakes, etc., in their natural habitat to increase children's respect for and enjoyment of the natural world.

- Plan animal areas adjacent to or in conjunction with plant areas so that children can see natural connections--bees pollinate, animals eat, etc.



RELATED ITEMS

ENVIRONMENTAL YARDS
CHILDREN'S GARDENS

611 DESIGNATED PLAY STRUCTURES

ISSUE

PLAY EQUIPMENT HELPS INTEGRATE TYPES OF PLAY WHILE PROVIDING AS MANY LARGE MUSCLE ACTIVITIES AS POSSIBLE.

JUSTIFICATION

When most people imagine "playgrounds" the image called forth is one of an area filled with traditional metal equipment designed primarily for large-muscle activity. Since many people used to feel that children's play value lies in "letting off steam," it seemed reasonable to provide primarily for large-muscle play and ignore other play values.

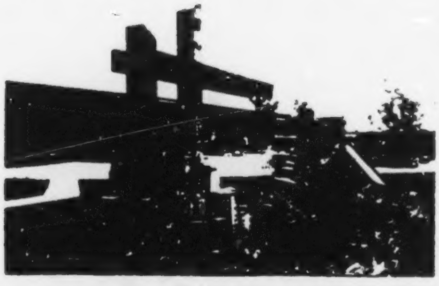
Large-muscle play is still considered vital by play experts. Children need to climb, master graded challenges, and develop muscle coordination (see PLAY ABOVE THE GROUND). Children also need an element of risk and physical accomplishment (see CHALLENGING ENVIRONMENTS WITHOUT UNDUE RISK).

Osmon gives the following list of large muscle activities which children need to engage in:

a) running
b) throwing
c) jumping
d) climbing
e) pedalling
f) pushing and pulling
g) hitting and punching
i) kicking
j) creeping and crawling
k) rythmic exercises
l) somersaulting
m) rolling and tumbling
n) balancing (Osmon, 1971, p. 101)

Friedburg adds two essentials which are missing in Osmon's list--swinging and sliding:

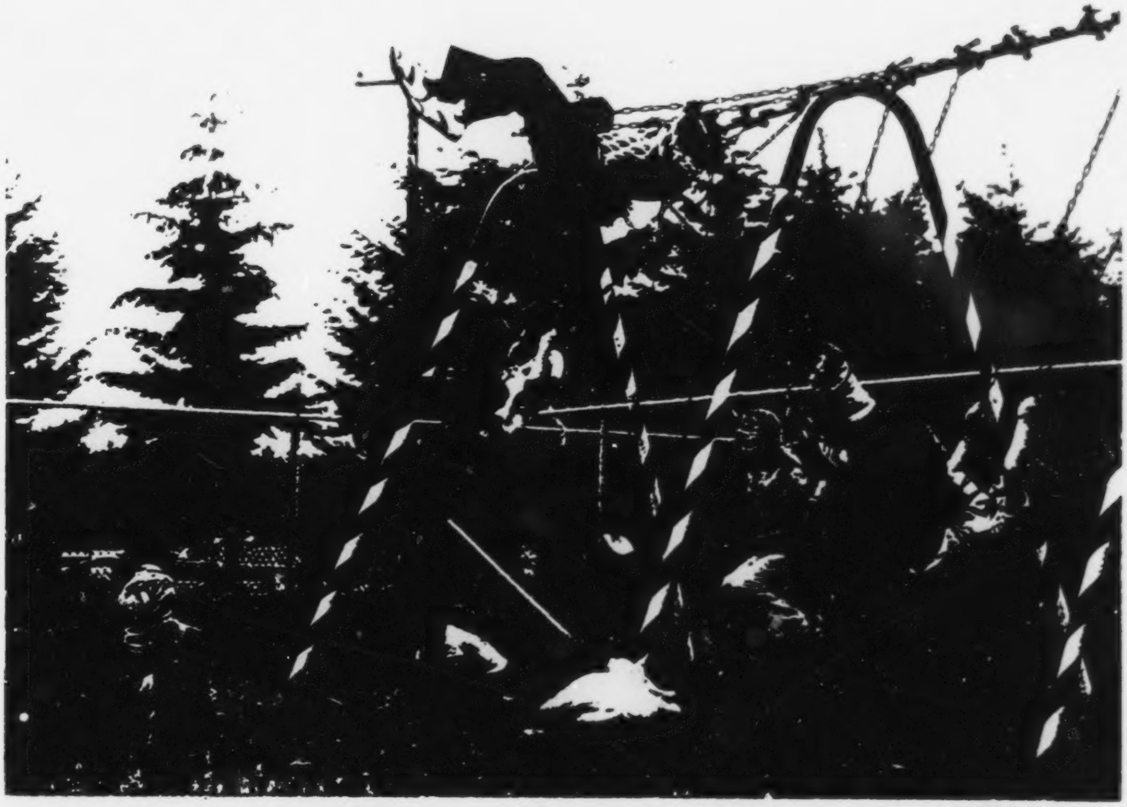
> *It is essential that the play areas provide equipment that allows children to jump, swing, slide, climb, crawl, run, find out how high, far, and fast they can go. The adult's caution tends to reduce the amount of challenge because adults underestimate a child's discretion. Even while learning their capabilities, children rarely overextend themselves.*



> *At the same time it is essential to take into account a child's reach, the distance he or she can jump, climb, and so on, because all activities must be scaled to the child's size and skill level.*
> (Friedburg, 1970, p. 4)

There are many choices currently available from play equipment manufacturers which do provide for a range of large-muscle activities.

Traditional metal equipment--swings, slides, merry-go-rounds, teeter-totters, monkey bars, etc., whether they are plain or decorated to look like rocket ships, covered wagons, or whatever--do in fact provide for large muscle activity (though they also are the most dangerous types of play apparatus--see CHALLENGING ENVIRONMENTS WITHOUT UNDUE RISK and SAFETY).



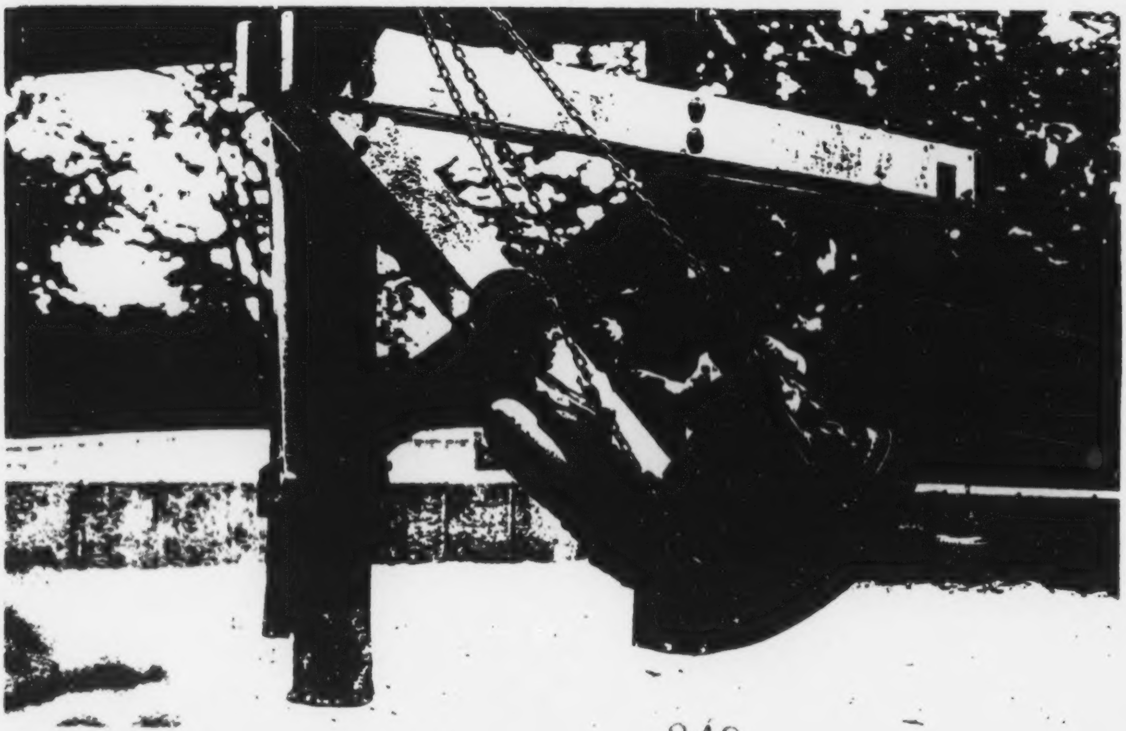
Contemporary play equipment made of wood and rope also provide a variety of large-muscle activities--climbing nets, slides, tire and rope swings, ramps, steps, etc. They usually provide platforms at several levels (see PLAY ABOVE THE GROUND) and sometimes nooks and crannies (see RETREAT AND BREAK-AWAY, and SPECIFIC AND AMBIGUOUS STAGES AND PROPS FOR DRAMATIC PLAY in Criteria Document-Child Support Services).

But both traditional and contemporary equipment as selected from manufacturers' catalogs may have severe limitations:

- Play equipment, which may actually dominate the site, frequently only allows large-muscle play--and discourages other equally developmentally-important types of play.
- Each type of large muscle play is usually provided at only one level of difficulty--PACED ALTERNATIVES for different developmental levels are not available.
- Safety considerations are neglected--large numbers of reports on the dangers of traditional metal equipment are published each year in newspapers across the

country. It takes little imagination to see that free-standing slides, hard-seat swings, traditional see-saws, and 10'-12' high metal bars are very dangerous. While children need challenges, risk of actual physical impairment is unnecessary.

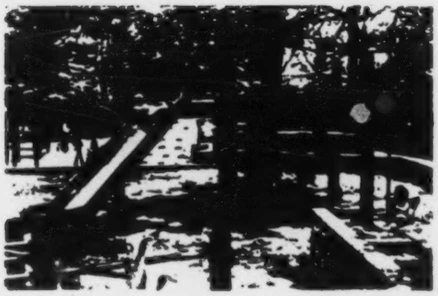
- Safety problems may be less easy to spot in contemporary wood equipment. The major safety problem with structures which manufacturers try to make "all purpose" is the many conflicts which occur between activities. Circulation is confused and a toddler may be trying to crawl up a ramp which older children are sliding down. A rope swing and a slide may both deposit jumping children to the same spot at the same time. One set of steps may lead to and from so many areas children crash into each other frequently.
- There is usually not a clear linking of developmental activities. Typically each activity is isolated. The extreme example is a traditional playground with equipment set individually. Sliding doesn't get the child anywhere but to the ground, not to another activity. Large muscle play is not perceived as part of the whole play experience but as an isolated pastime.



In research of playgrounds which used only traditional equipment, Bishop, Peterson and Michaels (1972) found that swings and slides are considerably more attractive to children than are horizontal ladders, monkey bars, see-saws, or horizontal bars. They further found that children perfer thematic and colorful enviornments that were clearly recognizable as places to play. A third finding was that children prefer groups of 3-4 children over larger and smaller groups.

Cooper found that children prefer traditional equipment which moves (e.g., swings) over static architectural structures. However, she also found that designed play structures which incorporate features popular with children will be used:

> *Among those structures which have proved popular with children are those which involve a number of different ways of climbing down again (e.g., slide, slippery pole, pulley-swing); a variety of levels and sizes of spaces; some small and partially hidden spaces accessible only to smaller chidlren; larger high-up spaces where older children can congregate, survey the scene, and feel a sense of mastery over the environment.* (Cooper, 1975, p. 237)



Of children interviewed at Bolling Air Force Base and at Fort Hood where they had a choice of contemporary or traditional equipment, the clear choice was for contemporary equipment (Travel Report, 1978).

PATTERN

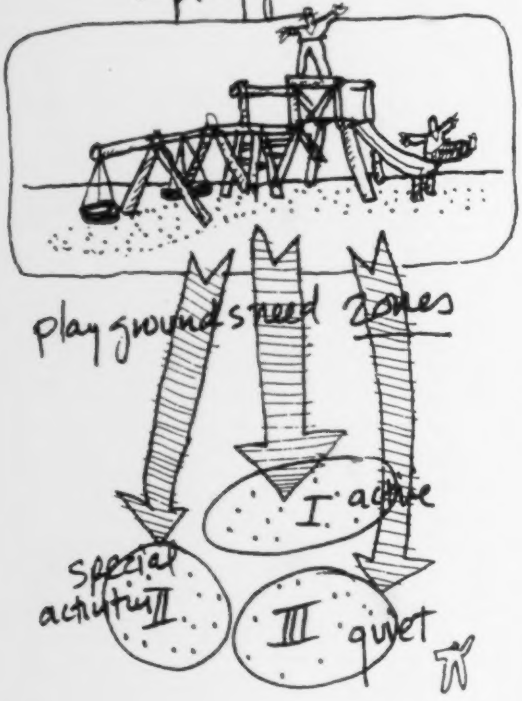
DESIGNATED PLAY STRUCTURES

PLAY STRUCTURES SHOULD PROVIDE MANY LARGE-MUSCLE ACTIVITIES IN GRADED CHALLENGES. PLAY STRUCTURES SHOULD BE ZONED WITH IDENTIFIABLE CIRCULATION WHICH LEADS TO OTHER TYPES OF PLAY.

RECOMMENDATIONS

- Play equipment, whether traditional, contemporary, or especially built, should be used only as a part of an overall design to incorporate activity zones (as in CIRCLES AND WEDGES: DEFINED ZONES OF ACTIVITY).

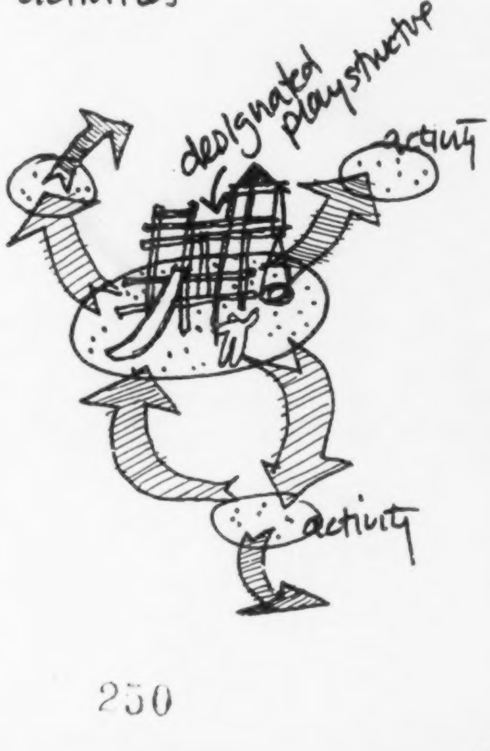
a single piece of equipment doesn't make a playground!


playgrounds need zones
I active
special activities II
III quiet

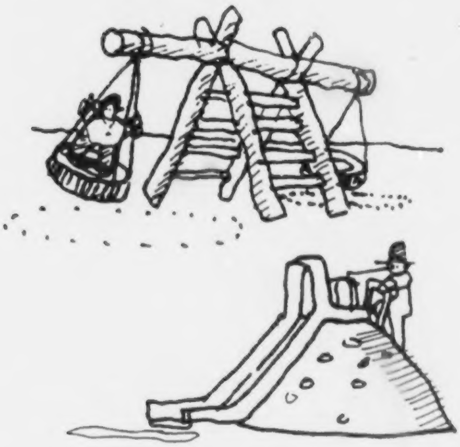
The right piece of designated play equipment could be used in each zone

- Play structures should only be used if they are large enough to support definite zones.
- If traditional equipment is used, plan it in conjunction with one or more other elements that would fulfill the symbolic needs which contemporary wood provides: the impression of warmer, softer, more protected hominess than the hard, cold institution-feeling of metal tubing.
- Play structures should double-function to provide for as many large-muscle activities as possible while also providing other play activities (e.g., AMBIGUOUS SETTINGS AND OBJECTS; RETREAT AND BREAKAWAY).
- Play structure circulation should encourage movement through progressively more difficult developmental tasks with stop-off places for RETREAT AND BREAKAWAY, and exits as a child reaches too difficult a challenge.

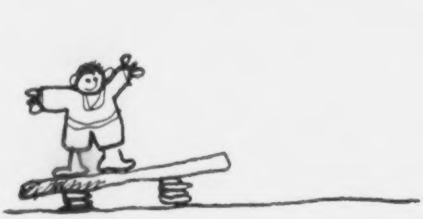
Linking to other activities


designated playstructure
activity
activity

swings & slides are basic



- Play structures should always include swings (soft: tires, ropes, etc.) and slides of some kind--preferably located as to lead the child to another activity.
- Play structures may include several activities. Cherry (1976) suggests as being developmentally important for younger children: rocking boat, rope ladders, rocking pan or flying saucer, barrel, ramps, and balance boards.



Include moving equipment for the very young

RELATED ITEMS	
	CONTINUITY AND BRANCHING PACED ALTERNATIVES CLEAR ACCOMPLISHMENT POINTS PLAY AREAS AS CHILDREN'S LANDMARKS PROXIMITY OF PLAY ACTIVITIES RANGE OF SOCIAL SCALE CHALLENGING ENVIRONMENTS WITHOUT UNDUE RISK PLAY ABOVE THE GROUND CIRCLES AND WEDGES: DEFINED ZONES OF ACTIVITY MAINTENANCE MINIMIZED VARIETY OF 3-DIMENSIONAL SPACES AMBIGUOUS SETTINGS AND OBJECTS

612 PLAY SPACES FOR INFANTS

ISSUE

THE EXPLORATORY BEHAVIORS OF INFANTS ARE DEPENDENT UPON A STIMULATING SOCIAL AND PHYSICAL ENVIRONMENT, YET LITTLE CONCERN HAS BEEN GIVEN TO THE PARTICULAR QUALITIES WHICH PLAY ENVIRONMENTS FOR THIS AGE GROUP SHOULD HAVE. IN GENERAL, IF THE ENVIRONMENT WERE RIGHT, INFANTS WOULD PLAY OUTSIDE AS MUCH AS OLDER CHILDREN.

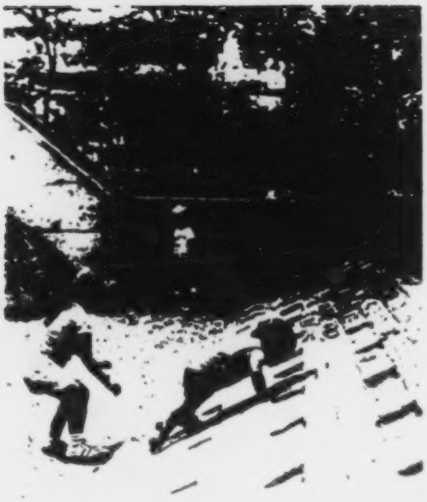
JUSTIFICATION

Millar (1968) describes infants as being "hungry" for stimuli when they are awake and comfortable. Chase and Williams (1974) suggest that the availability of objects appropriate to the sequential exploratory behaviors of infants may play an important role in the development and organization of thinking and understanding.

Because infants' levels of ability develop rapidly, they need stimulating play areas which offer a variety of graded challenges suitable to the full range of developmental stages. It is important that play things for infants and toddlers provide them with opportunities to experience the satisfaction of mastering their "world." Such experiences influence children's later development of confidence in their abilities.

Exploring by infants and toddlers usually involves moving toward, touching, and handling objects. This implies that for infant play environments, a variety of small, manipulable objects which can be visually examined, thrown, dropped, and squeezed, offer the greatest possibilities for infants and toddlers to repeatedly experience a bodily sensation which he or she is exploring. According to Millar (1968), this repetition is important to infants in order for them to test out, confirm, and "fix" an experience.

Evans and Saia (1972) stress that in addition to large and small muscle toys, it is important to provide opportunities for practicing sitting, standing, walking, and climbing skills. They suggest that padded steps of varying heights, simple climbing structures, and shallow pits which form a protective surrounding onto which toddlers can hold, are an aid for very young children to gain an awareness of their bodies and the forces acting on them.



There are few playgrounds in the U.S. which are explicitly designed for infants. The closest are the play yards immediately outside infant-care centers, which, with few exceptions, are dreadful smaller-sized versions of traditional play areas for older children. That which lacks developmental potential for older children certainly is inappropriate for infants who are developing at an even more rapid rate.

One positive example of an infant outdoor play space is the Pacific Oaks College Infant Care Center (Travel Report, 1978). A 1500 sq. ft. outdoor area adjoins a 700 sq. ft. indoor space and thereby provides a ratio of 90 sq. ft. of usable outdoor space per infant. The space is designed in a series of developmental steps from safe crawling space for the youngest infants (e.g., 4-5 months) to low climbing ramps, slides, and look-out places for older infants (e.g., 1-2 years). As the youngest children master crawling and shunting themselves over slight barriers between areas, more of the rest of the play area opens to them. Conversely, there is no way for an infant to get to a space which is too high, dangerous, or otherwise inappropriate for his or her developmental level--they cannot get to the steep wooden stairs u until they have mastered slighter inclines; they cannot get to the loose sand (which the youngest would immediately ingest) until they have mastered fairly sophisticated crawling (which developmentally occurs at roughly the same time as when they are no longer interested in putting absolutely everything in their mouths), and so on.

The entire environment at the Pacific Oaks College Infant Care Center meets the principles of PACED ALTERNATIVES and CLEAR ACCOMPLISHMENT POINTS. It was the inspiration for our thoughts on this matter, and is a clear and powerful image to influence other designs of infant spaces.

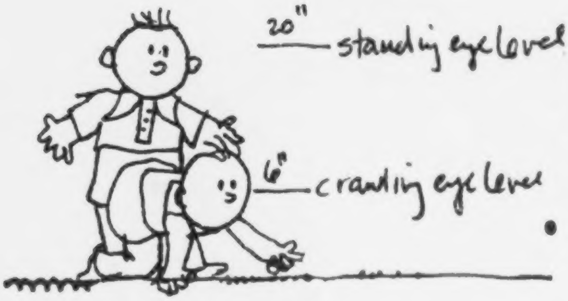
PATTERN

INFANT PLAY SPACES

CREATE INFANT PLAY SPACES WHICH HAVE PACED ALTERNATIVES SCALED THROUGH A SERIES OF MOTOR AND PERCEPTUAL-MOTOR TASKS APPROPRIATE FOR INFANT DEVELOPMENT. CREATE THESE SPACES FROM SOFT CRAWLING SURFACES, WARM MATERIALS, AND PLAY THINGS WHICH ARE SCALED AND SAFE FOR USE BY INFANTS AND YOUNG TODDLERS.

RECOMMENDATIONS

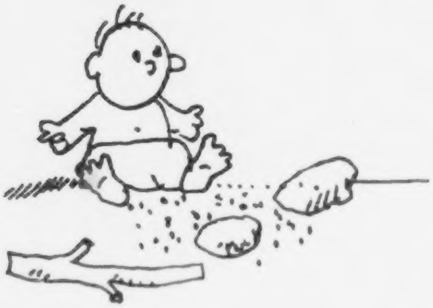
- The designed environment and the equipment within it must be responsive to the infant's changing scale and posture--from crawling with eye level at 6" above ground to standing at 20". Pits and platforms as described by Evans (1972) offer ways to safely separate infants from toddlers who are moving about.



- A variety of developmentally-appropriate equipment and play things will provide a range of increasingly more challenging tasks for the rapidly changing abilities of infants. Gradually sloping slides, ramps and sets of carpeted steps with other soft surfaces around them offer opportunities for infants to master their use.

- Most infant areas should be visually supervised from close proximity, and those which might require quick intervention and help should provide direct, ready access for adults (see VIEWS TO AND FROM PLAY AREAS).

- Because young children are usually fascinated with their mirror image, a reflective surface which reflects the infants and their activities is an important addition to infant areas.



- Textures which are typically beyond infants' reaches should become accessible, e.g., sand, grass, smooth stone, etc.

- Safe infant-toddler play areas can be created by physically separating them from those of older children, yet sounds of and views to older children's areas should be provided by visual and aural connections.

- Soft, multi-textured crawling surfaces with the proper supports are needed to facilitate graduation from crawling to walking. A paved area in the infant area is also desirable as a surface for pushing or riding wheeled toys and vehicles.

RELATED ITEMS

PACED ALTERNATIVES
CLEAR ACCOMPLISHMENT POINTS
VIEWS TO AND FROM PLAY SPACES

613 SKATEBOARDING RUNS

ISSUE

SKATEBOARDING IS A PHENOMENA WHICH EBBS AND FLOWS IN POPULARITY, BUT WHICH, UNHAPPILY FOR MANY PARENTS, NEVER GOES AWAY.

JUSTIFICATION

The main issue with regard to skateboarding is not its contribution to overall development, but its danger and its apparent inevitability of being popular. Children will skateboard down steep streets, curl around stop signs, glide near parked cars, and so on. They also will do incredibly beautiful tricks involving handstands on boards, and aerial acrobatics. The danger cannot be underemphasized (manufacturers are now making great profits on special gear and pads), but neither can the apparent inevitability of this sport. Some communities have legislated against skateboarding on public thoroughfares, but if alternatives are not provided which equal or surpass the challenge and even risk of streets, children will continue to play in peril.

Skateboarding can be developed into a relatively safe and physically-developing activity. If properly designed, skateboard runs can provide safety for the child in two ways:

- removing sources of danger (e.g., parked and moving cars)
- providing PACED ALTERNATIVES (much like ski slopes) so that children can be challenged and can succeed at their own level without having to try too dangerous runs

If properly designed, skateboard runs can also provide sufficient challenge to excite children, and if properly located, it can still be the center of activity, thus meeting older pre-teenaged children's needs to be seen by their peers and to receive peer approval.

One such good example of a skateboard run is part of the Irvine Comprehensive Playground south of Los Angeles (see Travel Report, 1978). Here the skateboard track is adjacent to the adventure playground, the community building and library (and thus first aid, telephones, etc.). Yet it is built into a large hill, has many twists and turns, and generally is an exciting child place.

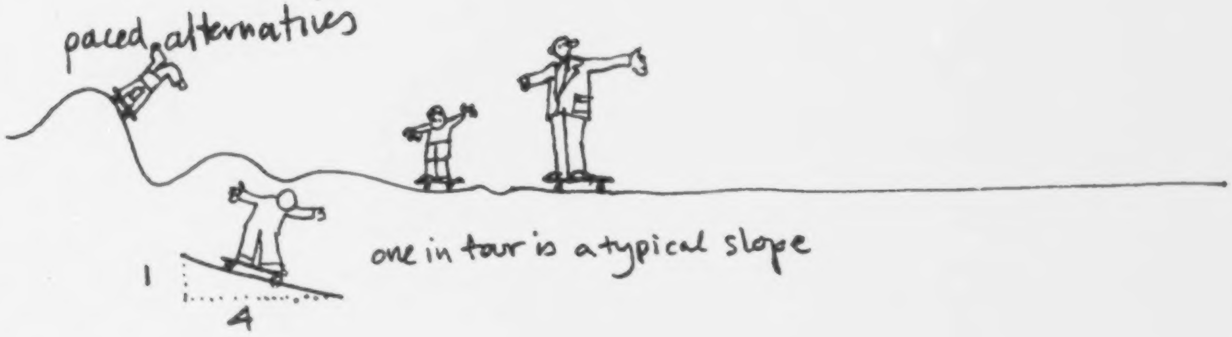
PATTERN

SKATEBOARD RUNS

AS PART OF A COMPREHENSIVE PLAYGROUND OR NETWORK OF PLAY, PROVIDE A SKATEBOARD RUN. BUILD IT INTO A HILL, OR USE GROUND SHAPING TO CREATE A HILL. PROVIDE TURNS, EMBANKMENTS, TWISTS, EVEN PERHAPS A LARGE-DIAMETER TUNNEL.

RECOMMENDATIONS

- Locate skateboard runs as part of comprehensive playgrounds or networks of play.
- Keep the skateboard run separated from pedestrian and other traffic paths.
- Locate a first aid station and telephone adjacent to an adventure play area, a creative play area, an arts and crafts area, or some other children's center which has an adult playleader or supervisor.
- Slopes of 1-in-4 are common, with curved side walls and even the possibility of a complete tunnel.


paced alternaties
one in four is a typical slope
1
4

RELATED ITEMS

PLAY LEADERS
COMPREHENSIVE PLAYGROUNDS
NETWORK OF PLAY
CHALLENGING ENVIRONMENT WITHOUT UNDUE RISK

614 RESIDUAL AREAS

ISSUE

PLANNING FOR CHILDREN'S PLAY IS CONSIDERABLY MORE THAN JUST LAYING OUT VARIOUS INDEPENDENT, WELL-DEFINED PLAY AREAS.

JUSTIFICATION

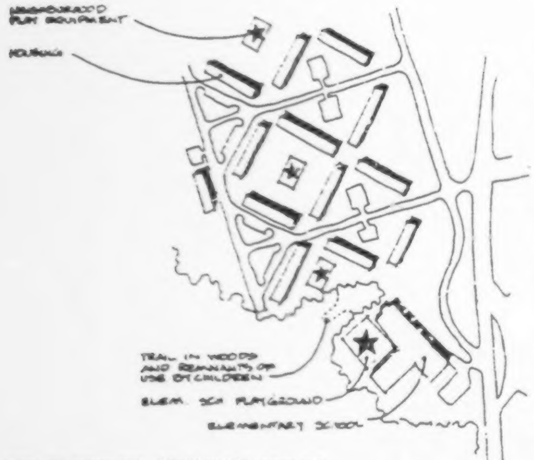
Following only the preceding patterns for specific types of play areas could lead to a rigid and bland playground which is comprised of adjacent areas for different uses, but which does not have any overall organization or character. Antedates to this are the preceding organizing principles, the following qualities of play spaces, and the allowance for residual areas.

A playground is not simply comprised of adjacent, well-defined areas for different types of play (e.g., sports, kickball, climbing, adventure play). Rather it is, in large part, the residual or left-over spaces between these other spaces which tie the overall playscheme together and which provide much of the joy and excitement for children. It is in these unprogrammed spaces that children explore and invent, that they create their own fantasies from the random, unplanned assortment of environmental cues, and that they may just lie back and watch or dream.

As one of our clients recently said, "We need more places where children can retreat from highly structured and active play, where they can be quiet and just allow the world around them to come to them through all of their senses."

As part of our site visits and research on military bases, we observed several such spaces. At Fort Lewis, for instance, there were several places where edges of wooded areas near housing provided such spaces. In one case, a finger of wild grasses and small trees cut partially between a school designated play structure area and a grassy field. Paths and matted grass were seen throughout this area--clear evidence of its importance to children.

Such areas are natural links between other play areas and provide views to and from other areas.


NEIGHBORHOOD PLAY EQUIPMENT
HOUSING
TRAIL IN WOODS AND REMNANTS OF USE BY CHILDREN
ELEM. SCH PLAYGROUND
ELEMENTARY SCHOOL

PART OF PARKWAY COMMUNITY HOUSING (MOSTLY NCO)

PATTERN RESIDUAL AREAS

PLAN RESIDUAL OR LEFT-OVER SPACES IN AND AROUND ALL OTHER SPECIFIC PLAY AREAS. USE NATURAL LANDSCAPING TO CREATE THESE SPACES. ALLOW GRASSES, WILD FLOWERS, BUSHES, AND TREES TO GROW IN A NATURAL MANNER.

RELATED ITEMS

NETWORK OF PLAY
COMPREHENSIVE PLAYGROUNDS
VIEWS TO AND FROM PLAY AREAS
SEPARATED BUT LINKED ZONES
NESTS FOR QUIET PLAY
LANDSCAPING MATERIALS

GENERAL DESIGN OF PLAY SPACES

700

In designing specific play areas and spaces, there are a number of general issues to consider which will influence the character of each particular solution, and in return will influence the quality of the overall play setting. Most of these overriding principles will apply to all of the specific play areas. Overriding design principles are:

701 Ambiguous Settings and Objects
702 Loose Parts
703 Paced Alternatives
704 Challenging Environments Without Undue Risk
705 Nests of Quiet Play
706 Range of Social Scale
707 "Children Only" and Multi-Age Group Play Territories
708 Water Play Areas
709 Protected Sand and Dirt Play Areas
710 Play Above the Ground
711 Play Areas as Children's Landmarks
712 Clear Accomplishment Points
713 Retreat and Breakaway Points
714 Variety of 3-Dimensional Spaces
715 Small Arts and Crafts Nooks
716 Stages and Props
717 Supervised Fire and Cooking Area
718 Imageability and Orientation
719 Orderliness and Consistency
720 Emotional Release Points
721 Repetition and Multiple Coding
722 Barrier-Free Environment

701 AMBIGUOUS SETTINGS AND OBJECTS

ISSUE

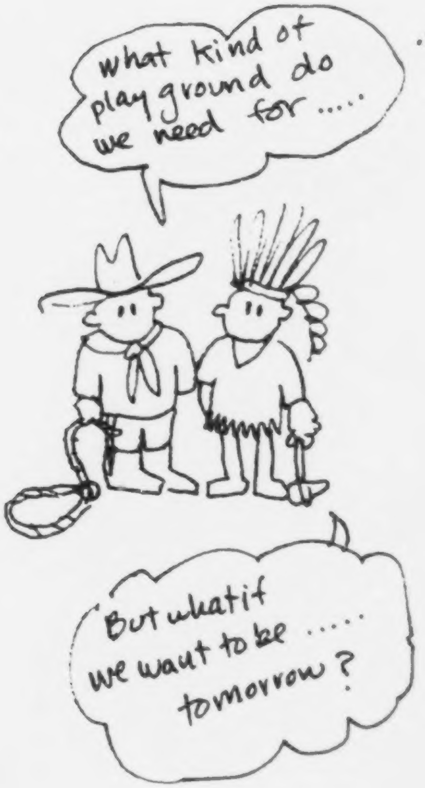
CHILDREN'S SPONTANEOUS FANTASY PLAY IS STIMULATED BY AMBIGUOUS SETTINGS AND OBJECTS FROM WHICH THE CHILD CAN CREATE INNER FANTASIES, AND NOT BY THE MAJORITY OF OVERLY-SPECIFIC AND CONCRETE PLAY EQUIPMENT WHICH LITTERS THE NATION'S PLAYGROUNDS.

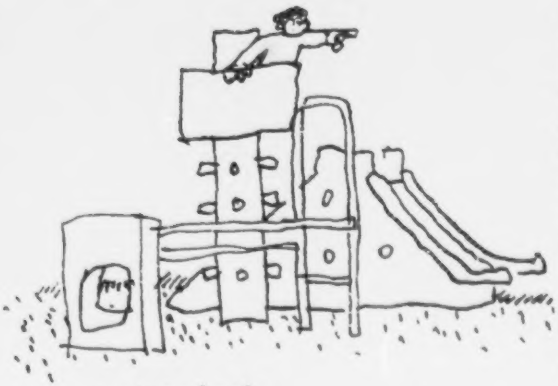
JUSTIFICATION

Considerable research in the area of child-environments indicates that ambiguous settings are necessary for a child's creative, imaginative, and self-initiating development (see summaries in Coates, 1976). In such settings, an undefined structure can become anything a child wishes, from a castle to a car, and the child can generalize play in order to create a personal setting or social role.

Ambiguous settings allow a child to imagine freely, without the intrusion of adult expectations in the form of specific representational objects.

Research conducted by Gary Moore in Australia shows that children indulge in fantasy play in two ways: informal or spontaneous fantasy which appears to be environmentally- or object-induced, and more structured and planned fantasy play which can happen anywhere (e.g., a group playing cowboys and Indians). Further, this research showed that fantasy play is a very fragile thing, the fabric of which can be shredded by the presence of an adult observer (Moore and Rose, 1976).


what kind of playground do we need for .....
But what if we want to be ..... tomorrow?

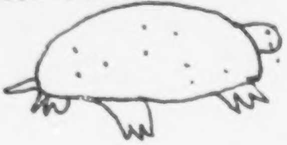


Defined spaces such as playhouses, garages, stores, and bridges evoke specific responses from a child. This modeling behavior is important for the exceptional child who is often over-protected and sheltered from real-world transitions. In this case, activities such as drawing curtains, washing dishes, etc., further intensify and reinforce appropriate modeling behaviors.

But for most children, "concrete turtles" are the nemisis of imagination. Ambiguous settings relate more specifically to imagination, emotional development, and representation abilities. More defined settings relate to role playing, personality development, and social interaction.

ambigious "designated play equipment" is best!

not concrete turtles



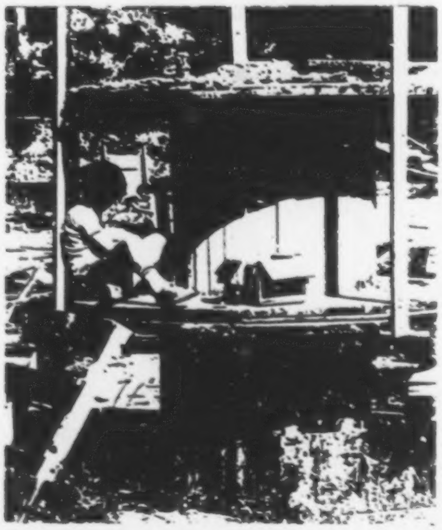
PRINCIPLE

AMBIGUOUS SETTINGS AND OBJECTS

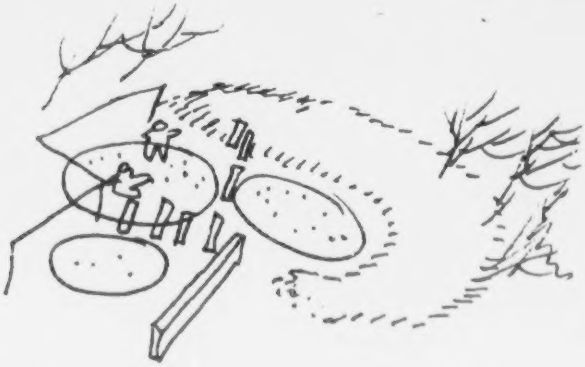
PROVIDE AREAS AND OBJECTS THAT ARE NOT OVERLY CONCRETE AND ARE NOT EXPLICIT ABOUT AN EXPECTED USE.

RECOMMENDATIONS

- Resist manufacturers' offerings which resemble real objects, e.g., a metal space ship, covered wagon, rocking horse, etc.
- Allow play structures to resemble a variety of things so that a child can choose to play house, fort, service station, airplane, whatever.



- Provide some small spaces (scaled to fit 2-4 children) protected from direct adult view in order to promote fantasy play.



provide small spaces for 3-4 kids

- Provide novelty in the environment so more exploration will occur (Berlyne, 1968).
- Provide flexible spaces which can be closed with sliding panels or opened wide to create many combinations for children's imaginations.
- Provide LOOSE PARTS to combine with space in order to create an environment matching a child's imaginary world.

novelty in the environment so
more exploration will occur.

BEST COPY AVAILABLE

702 LOOSE PARTS

ISSUE

CHILDREN LEARN SPONTANEOUSLY THROUGH ACTIVE INTERACTION WITH THE ENVIRONMENT AROUND THEM, YET SO MANY ENVIRONMENTS DESIGNED FOR CHILDREN ARE STATIC AND RIGID. ONE OF THE MOST IMPORTANT PARTS OF GROWING UP IS HAVING THE OPPORTUNITY TO EXPERIMENT ON THE WORLD, TO CHANGE IT, TO SEE THE RESULTS OF THESE CHANGES, AND LEARN FROM THE TOTAL EXPERIENCE. THEREFORE, CHILDREN NEED TO BE ABLE TO MANIPULATE THE ENVIRONMENT AROUND THEM.

JUSTIFICATION

Children need to satisfy their curiosity and experience the pleasures which are derived from discovery and invention. Through "unstructured play" children learn new skills, gain self-confidence, take pride in their achievements, build up a picture of reailty, sort out fact from fantasy, and extend their knowledge of the real world.

M. J. Ellis of the Motor Performance and Play Research Laboratory of the Children's Research Center, University of Illinois writes:

> 1. *Children play for the stimulation they receive, not just to burn up energy.*
>
> 2. *Children need to indulge in activities that become increasingly complex with time.*
>
> 3. *As a by-product, children learn about their physical surroundings, and about their own roles in a social group.*
>
> *The essential characteristic for a playground is that it should elicit new responses from the child as he plays, and that there responses increase in complexity as play proceeds.* (1972, p. 4)

New responses can be elicited from children through the well-designed use of variables or "loose parts." Simon Nicholson (1971) stated the theory of loose parts quite simply:

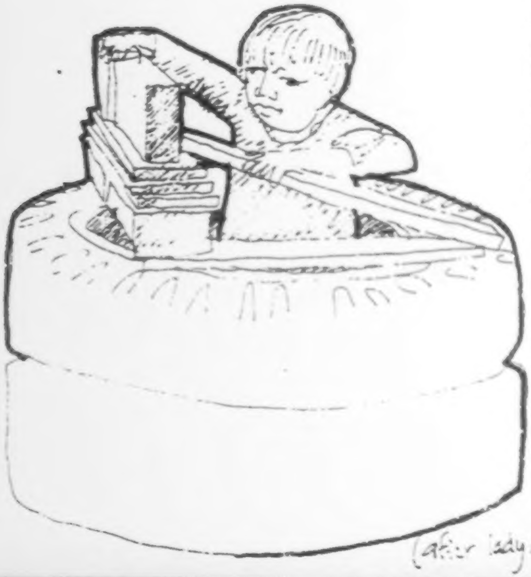
> *In any environment, both the degree of inventiveness and creativity, and the possibility of discovery, are directly proportional to the number and kinds of variables in it.* (p. 30)

In response to this challenge for designers, Nicholson expands upon the theory of loose parts:

> *There is evidence that all children love to interact with variables, such as maperials and shapes; smells and other physical phenomena, such as electricity, magnetism and gravity; media such as gases and fluids; sounds, music and motion; chemical interactions, cooking and fire; and other people, and animals, plants, words, concepts and ideas. With all these things all children love to play, experiment, discover, and invent and have fun.* (p. 30)

In NESTS FOR QUIET PLAY, the information cited from Garvey's (1977) findings suggest that children need objects in the environment with which to interact, therefore the concept of LOOSE PARTS is reinforced.

Loose Parts are a necessary component in any play environment. Even handicapped and exceptional children, though requiring special care and attention, can cope with a "rough and ready" atmosphere that is different from the usual supervised play environment. Exceptional children learn new skills and gain self-confidence in the same ways as average children (Handicapped Adventure Playground Association, n.d.). Therefore, environments for the exceptional child should provide similar challenges and experiences, yet be designed with the particular group of children in mind.



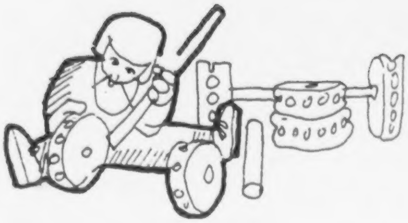
(after Lady Allen, 1968)

PRINCIPLE

LOOSE PARTS

LOOSE PARTS WHICH THE CHILD CAN MANIPULATE IN ORDER TO SHAPE A PERSONAL ENVIRONMENT ARE NECESSARY FOR COGNITIVE AND OTHER DEVELOPMENTS. THEY SHOULD BE DYNAMIC, INTERCHANGEABLE, AND MANIPULABLE.

THERE ARE THREE DIFFERENT TYPES OF LOOSE PARTS:



1. MANUFACTURED (E.G., A PUZZLE), IN WHICH THE CHILD REALIZES AN INVARIABLE FINISHED FORM
2. MANUFACTURED KIT (E.G., TINKER TOYS, LEGO) IN WHICH THE FINISHED FORM IS FLEXIBLE
3. DISCARDED OR NATURAL PARTS (E.G., TIRES, BOARDS, SAND, GRAVEL) WHICH CAN BE USED IN AN NUMBER OF INTERCHANGEABLE WAYS (MOORE, COHEN, AND TEAM 699, 1978).

RECOMMENDATIONS

- Provide materials and space for children to build undetermined structures.
- Provide opportunities for children to find natural manipulables (e.g., sand, rocks, dirt, plants, etc., from nature area).
- Provide a variety of raw materials which can be assembled in a variety of ways (tires, wood, posts, etc.).
- Include provisions, storage, activity sp space, tools, for child use of "found objects" such as tires, boards, bricks, etc.
- Provide manufactured sets of loose parts such as tinker toys, etc.
- Provide opportunity for the child's awareness of a finished form before constructing it from a kit of parts (may mean involving children in design and construction).

RELATED ITEMS

NESTS FOR QUIET PLAY
ADVENTURE PLAY AREAS
STRATEGIES FOR IMPLEMENTATION
CREATIVE PLAY AREAS

703 PACED ALTERNATIVES

ISSUE

THE ENVIRONMENT MUST DYNAMICALLY PACE (AND PUSH) THE CHILD WITHOUT EXCEEDING AN OPTIMAL LEVEL OF DISCREPANCY BETWEEN THE CHILD'S CURRENT LEVEL OF SKILL AND THE ENVIRONMENTAL DEMANDS PUT ON HIM OR HER. EACH CHALLENGE IS NOT BEYOND THE SKILL LEVEL OR ANTHROPOMETRIC FIT OF THE CHILD. THERE MUST ALSO BE STIMULUS FOR CONTINUING PROGRESSION TO THE NEXT SKILL LEVEL.

JUSTIFICATION

Environments with which the average child can cope are often frustrating or impossible for the person with reduced competency, e.g., a much younger child or infant. The environment must not frustrate any child, and yet must provide enough challenges to generate and maintain activity (Ayers, 1972; Cratty, 1974). Children have a great need to gain self-confidence and a positive self-image. Feelings and self-concept can be seriously damaged if children never reach goals which they set out for themselves (McCandless & Evans,1973 Most development results from an optimal discrepancy between child and environment--challenges are made to existing motor, cognitive, and social schemata, motivating the child from one state of equilibrium to another.

PATTERN

PACED ALTERNATIVES

PACED ALTERNATIVES PROVIDE INCREMENTAL, PACED INCREASES IN REQUIRED SKILLS THROUGHOUT THE CHILD'S ENVIRONMENT.

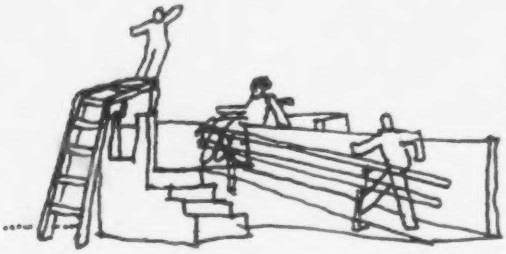
RECOMMENDATIONS

- Arrange activities according to CIRCLES AND WEDGES to make pacing move around the circular zone.
- For each type of activity, provide several skill levels of accomplishment, e.g., climbing steps, climbing a ladder, climbing a cargo net, etc.
- For challenging activities, provide stopping places where children can feel good about leaving an activity, not feel that they are "quitting."

- Challenge should be provided in a variety of of ways.

- Play experiences should provide an awareness of challenges ahead without being intimidating--children should be able to see new challenges and accomplishment points ahead while finishing another activity.

- There should be some portions of the environment designed to the scale and skill level of infants, as well as for children up to 13 years of age.



paced alternatives

- Older children require less emphasis on balance, general coordination, and other physical activities, and should be provided with more complex and paced cognitive challenges.

- The play environment should provide for similar activities to occur at different rates without undue interference.

RELATED ITEMS

CLEAR ACCOMPLISHMENT POINTS
DEVELOPMENTALLY-APPROPRIATE SPACES FOR INFANTS
CHALLENGING ENVIRONMENTS WITHOUT UNDUE RISK

704 CHALLENGING ENVIRONMENTS WITHOUT UNDUE RISK

ISSUE

CHILDREN NEED CHALLENGES, BUT SAFETY IS A MAJOR CONCERN OF PARENTS AND ADMINISTRATORS. ACCIDENTS WHICH HAPPEN TO PLAYING CHILDREN SEEM SO TRAGIC AND NEEDLESS.

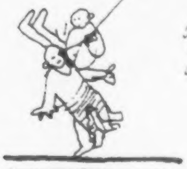
JUSTIFICATION

Playgrounds in the past have been a source of numerous accidents (Sweeney, 1977). Hard-seat swings which can hit heads, free-standing slides from which children can fall, hard asphalt surfaces under equipment--all are dangerous elements.

Naturally, the two most prevalent dangers are:

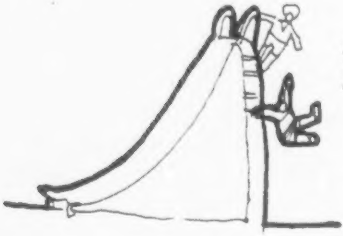
1. unwise zoning of activities within the play yard which permits children who are jumping from swings to land on children playing in the sand, etc.;
2. unwise siting which forces children to cross busy streets to reach play areas (Wilkerson, 1978).

- TWO Typical safety problems With traditional play equipment



getting hit with a swing

Other safety factors include "losing" small children if play area isn't enclosed, older children using hard balls and bicycles in areas where small children are playing, vandalism which leaves broken glass in sand play areas, and so on.



falling from slides

At first glance, the newer creative playgrounds and adventure playgrounds may seem to be much more dangerous than the older metal equipment and asphalt playgrounds. But the data contradict this assumption and precautions are being taken by designers and planners to reduce risk.

As dangerous as they may look to the uninitiated and though precise data is still somewhat scarce, preliminary evidence is that adventure playgrounds have fewer serious accidents than do traditional playgrounds (U. S. Adventure Playground Association, 1978).

In adventure playgrounds, the most important "risk-reducer" is the playleader. That person is always available to help children use tools, materials, fire, water, etc., safely, and is right on the scene in an emergency.

Designers carefully & clearly indicating precautions taken to reduce risks

Another risk-reducer is the fence surrounding adventure playgrounds (Travel Report, 1978; see Harbourfront Adventure Playground). The fence protects children against traffic and circulation problems, human dangers, and vandalism.

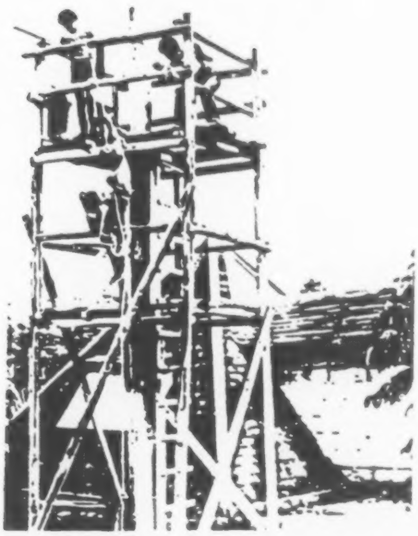
Both creative and adventure play areas tend to limit hard surfaces and use instead natural ground covers such as grass, sand, wood chips, etc. (Ledermann & Trachsel, 1968; Lady Allen, 1968; Bengtsson, 1970; Utzinger, 1970).

A safety measure frequently taken in creative playgrounds is the zoning of activities (Dattner, 1969). (See DEFINED ZONES OF ACTIVITY.)

Unfortunately, these kinds of provisions for safety are often unperceived by administrators when reviewing playground designs.

On the other side of the issue is the importance of challenges. Designers are faced with the problem of providing challenges for children (see PACED ALTERNATIVES). Diane Seitzky, a nursery school teacher, in an address to the Convention of the Midwest Association for the Education of Young Children, said:

> *The playground offers an ideal environment in which young children can experience elements of risk and challenge. The real needs of children--including the need to test and to extend their abilities through risk-taking--can be met successfully in a well-planned play area without compromising a high degree of safety. . . . The safety of play area facilities can be maximized by such things as providing soft play surfaces, . . . proper construction of play structures, and thorough development of design criteria which should include concepts of freedom, control, complexity, interaction, and adaptability.* (Seitzky, 1975)



Designs which actually provide CHALLENGING ENVIRONMENTS WITHOUT UNDUE RISKS may be rejected because their unconventional nature makes safety factors difficult to recognize (Travel Report, 1978; see interview with Jay Beckwith).

Safety is both a planning issue and a detailed design issue. While it deserves serious consideration at each phase, too great a fear of danger shouldn't stop the planning process. Safety becomes the responsibility of the designer and the review team.

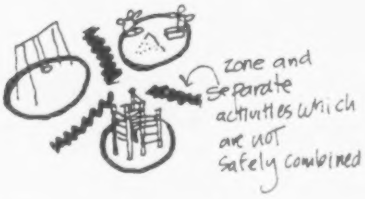
PATTERN

CHALLENGING ENVIRONMENTS WITHOUT UNDUE RISKS

PLAN PACED ALTERNATIVES WITH SAFETY FACTORS IN MIND: ZONING, SOFT SURFACES, SAFER EQUIPMENT, ETC., AND THEN CLEARLY INDICATE SAFETY PRECAUTIONS TO ALL REVIEW BOARDS.

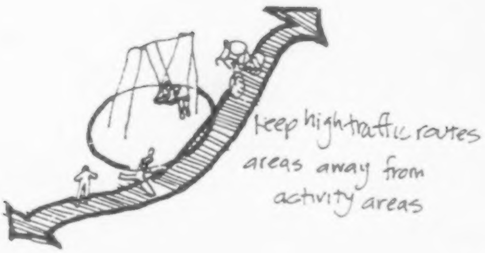
RECOMMENDATIONS

- Designers should carefully and clearly indicate the precautions taken to reduce risks. Safety is both a planning issue and a detailed design issue.



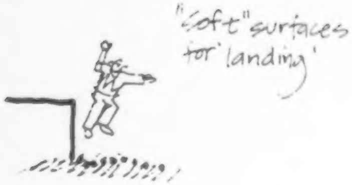
- Zone the activity areas by using safety as one factor in decision making.

- Plan circulation so it will not cross activity zones.



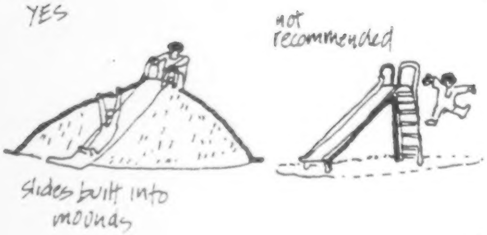
- Provide for easy maintenance of surfaces so litter and glass will not collect.

- Use "softer" surfaces such as grass, wood chips, dirt, and sand in areas where children would fall.

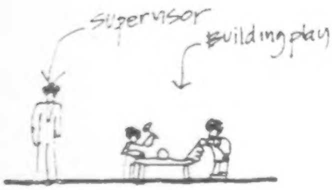

"soft" surfaces for 'landing'

- Plan equipment to minimize risks, e.g., moving parts should be made out of "softer" materials such as tires, ropes, and canvas which are much safer than conventional metal (or hard plastic) and chain swings.

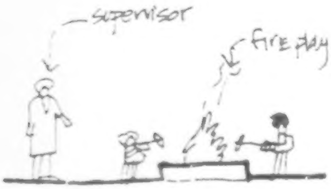
- Build slides into mounds rather than having them be free standing.


YES
not recommended
slides built into mounds

- Provide climbing equipment made of ropes, etc., which are safer than metal bars.


supervisor
building play

- Plan fire play and building activities only in supervised play areas.


supervisor
fire play

RELATED ITEMS

LOOPED CIRCULATION
SEPARATED BUT LINKED ZONES
SUPERVISED FIRE AND COOKING AREA
PLAY ABOVE THE GROUND

705 NESTS OF QUIET PLAY

ISSUE

CHILDREN HAVE A DEVELOPMENTAL NEED FOR COGNITIVE, MANIPULATIVE PLAY. THIS PLAY OCCURS INDIVIDUALLY OR IN SMALL GROUPS AND NEEDS A PRIVATE SPACE AWAY FROM ACTIVE AREAS.

JUSTIFICATION

Quiet, manipulative play with objects is essential to good developmental growth. Garvey (1977) suggests that for the child "an unfamiliar object tends to set up a chain of exploration, familiarization, and eventual understanding" (p. 41).

In studying the concept of privacy in childhood and adolescence, Wolfe and Laufer (1975) discovered that the meaning of privacy changes with age but that four major meanings are used at all ages--"alone," "controlling access to information," "no one bothering me," and "controlling access to space."

Observation at Bolling Air Force Base (Travel Report, 1978, p. 40) showed that "children use play areas for quiet play or as a place to meet, talk and wait as much as they use it for active play."

In playground design, Beckwith has allowed for two kinds of quiet play, play alone and in small groups (Hewes, 1975, pp. 145-146;see Big Toys, Travel Report, 1978). He notes that the organization of the space should permit children to talk to each other in normal conversational tones without having to shout.

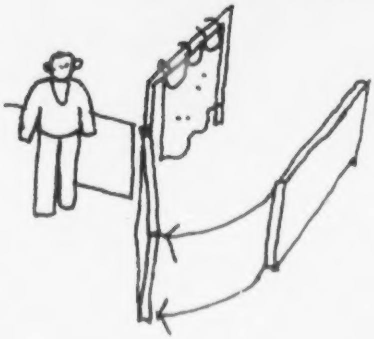
The Central Mortgage and Housing Corporation of Canada (1978, p. 17) recommends that this space "should be intimate, away from boisterous activity . . . near to passive landscaping or an adult seating area."

PATTERN

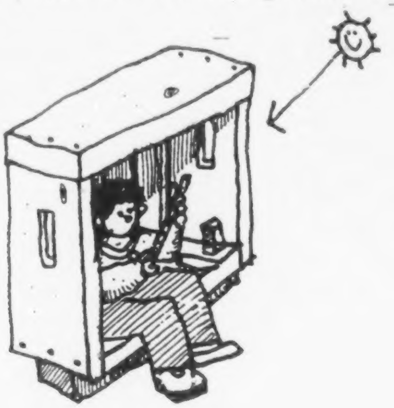
NESTS FOR QUIET PLAY

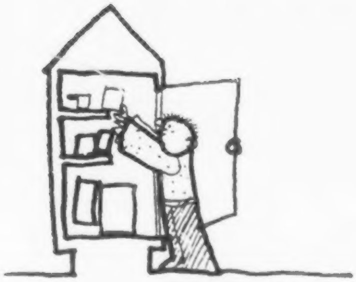
SMALL ENCLOSABLE SPACES BIG ENOUGH FOR 1-4 CHILDREN WITH PROTECTION FROM ACTIVE PLAY AREAS AND SMALL MANIPULABLE PLAY OBJECTS AVAILABLE WILL ENCOURAGE PLAY FOR COGNITIVE DEVELOPMENT.

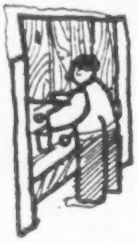
RECOMMENDATIONS



- Provide spaces where children will be able to control access with flaps, gates, brush, etc.
- A nest has the following physical characteristics:
  - enclosure (single access direction that captures sunshine!)
  - small area (3-6 sq. ft.)
  - variety of textures
  - a low dry place off of the ground for sitting







- Within small quiet play areas provide storage (lockable and moisture proof) for small manipulable items which children can easily reach.
- Locate quiet nests away from large muscle, large group areas. Use acoustical buffers.
- Locate quiet nests close to compatible spaces such as the sand play and gardens.
- Make provision for child arrangement of the space which will facilitate conversation and interaction.
- Group size for cognitive, manipulative play will range from 1-4 children.
- Scale should be intimate to child (e.g., a 3 ft. high barrier will appear to make a space very private to a child).
- The spaces should have calming elements such as greenery, shade, etc.

RELATED ITEMS

AMBIGUOUS SETTINGS AND OBJECTS
RETREAT AND BREAKAWAY
RANGE OF SOCIAL SCALE
OUTDOOR STORAGE

706 RANGE OF SOCIAL SCALE

ISSUE

CHILDREN WILL PLAY ALONE, IN PAIRS, IN SMALL GROUPS, IN LARGER GROUPS, AND WITH OLDER CHILDREN AND ADULTS. PLAY AREAS MUST HAVE A RANGE OF SPACES FOR SOCIAL INTERACTION.

JUSTIFICATION

In an earlier publication we argued the following:

> *Children...need places to work alone, to do task-oriented activities, or to retreat and dream (Gordon, 1972). Being alone and learning to accept oneself and others is also basic to the social and emotional development of a stable self-concept. There is always a need for spaces for a child and a staff member to work one-to-one. On the other hand...children often seek group experiences...Increased interest in play comes from greater social interaction (Moran and Kalakian, 1974).* (Moore, Cohen, and Team 699, 1977)

According to research done by Whalen, Flowers, Fuller, and Jernigan (1975), smaller children use more personal space than older children and maintain greater distances from opposite- rather than from same-sex peers. Personal space refers to the imaginary boundaries around people which they consider to be private. Entry into that space by another person would be considered an intrusion unless proper social interaction had taken place.

In many playground designs, a common problem is the lack of small enough spaces for small groups of little children. We know from research that most spontaneous groups in outdoor open space are made up of from three to five persons (Saarinen, 1968). It has also been argued (Millar, 1968, p. 181) that the best size of a preschool play group is from two to four children.

Spaces for large-group activity are also necessary, though seldom are overlooked.

> *The provision of spaces accommodating a RANGE OF SOCIAL SCALE in terms of size, type, and enclosures, but most especially in terms of the size of group activity they will contain, would provide greater opportunities for different individual and interpersonal experiences. Solitude and physical togetherness can be experienced in small spaces while team sports can be organized in large open fields. Children and staff can work together intently without interruption in very separate places, while children can work best cooperatively when the space is large and open enough for them to see the activities of others.* (Moore, et al., 1977, p.

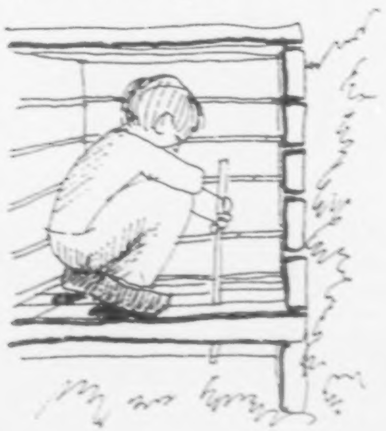
PATTERN RANGE OF SOCIAL SCALE

PLACES APPROPRIATE IN SCALE FOR ONE CHILD, TWO OR MORE CHILDREN, AND CHILD-ADULT COMBINATIONS SHOULD BE CREATED WITHIN THE PLAY AREA.

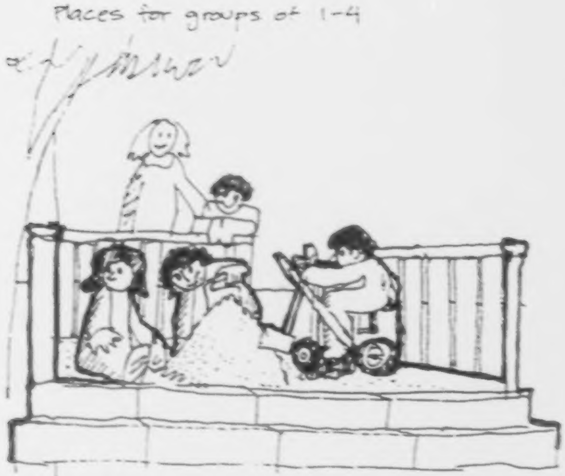
RECOMMENDATIONS

- Provide nooks and crannies for single children.

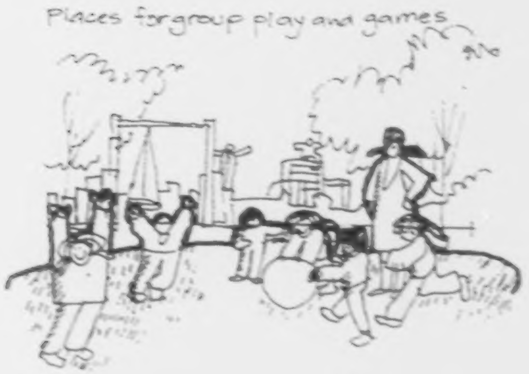
Places for single children



- Provide places which accommodate 1-4 children.



- Provide spaces for large muscle activity, including wide-open spaces such as a field for games which accommodates at least 10 children (see DEFINED ZONES OF ACTIVITY).


Places for group play and games

- Provide a variety of spaces from small to large in any play area design.
- Multiple ways of enclosing spaces should be provided, e.g., moveable partitiions boxes, building materials, canvas curtains, etc.
- Private places for solitary play must be easily accessible from larger activity areas.

- Private spaces must be easily "owned" and made personal.
- Allow "elbow room" in the layout of play areas for small children since they use more personal space.

RELATED ITEMS

QUIET PLAY
RETREAT AND BREAKAWAY
DEFINED ZONES OF ACTIVITY

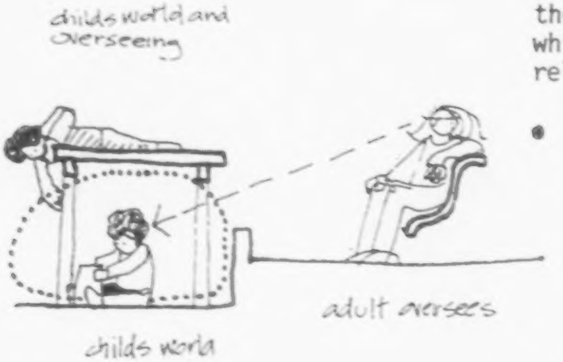
707 "CHILDREN ONLY" AND MULTI-AGE GROUP PLAY TERRITORIES

ISSUE

CERTAIN PLAY ACTIVITIES INVOLVE ONLY CHILDREN OF A SPECIFIC AGE GROUP: OTHER ACTIVITIES CAN BENEFIT FROM PARTICIPATION OF MULTI-AGE GROUPS, INCLUDING ADULTS.

JUSTIFICATION

Small children, older children, and adults will all use a play space in various ways. Whether they will all feel comfortable and secure in the space will depend in part on the proper level of social interaction, which in turn will be affected by design-related factors such as the following:



- Proximity to housing
  - Parents and small children prefer to be within sight and hearing of each other.
  - The more adults potentially in sight and hearing of play areas, the better the supervision will be.
- Proximity of participants
  - Older children frequently supervise younger children.
  - Adults frequently take children with them to adult recreation areas.
- Safety
  - Older children may play games which are dangerous to young children (hard ball, bicycles, etc.).
- Dramatic Play
  - Children may be inhibited by too-close adult supervision.
- Size and Scale
  - Children prefer small enclosed spaces which are "room-like."

This information indicates that young child-older child and child-adult interaction spaces should be separated by barriers which do not interfere with visual and auditory contact. The information also suggests that adult spaces, child spaces, and older child spaces should be planned in conjunction with each other in the NETWORK OF PLAY.

There is also an interface possible, a zone where all age groups can mingle, learn from each other and enjoy each other.

> *Adult-child and older child-child interactions are developmentally important and activities and furnishings, like seating, or close ballgame areas, that attract and encourage these contacts should be an organizing concept in a play area design.* (Travel Report, 1978, p. 178)

The discussion of Mary B. Conolly Children's Playground suggested the following:

> *Certain play equipment seems to allow and encourage parents to actively play with (not just supervise) their children. ... One possible clue here is the adult-like challenges and sizes of the largest play structure.* (Travel Report, 1978, p. 144)

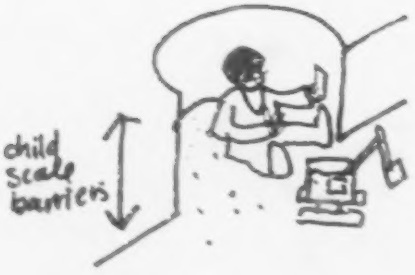
PATTERN

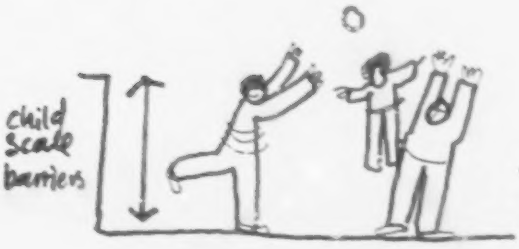
"CHILDREN ONLY" AND MULTI-AGE GROUP PLAY TERRITORIES

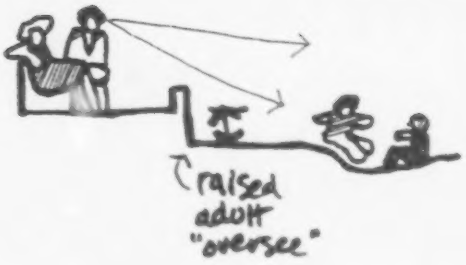
SOME PLAY ZONES WITHIN PLAYGROUNDS AND PARKS SHOULD BE FOR EXCLUSIVE USE OF ONE AGE GROUP, AND OTHER ZONES SHOULD BE FOR USE OF MULTI-AGE GROUPS.

RECOMMENDATIONS

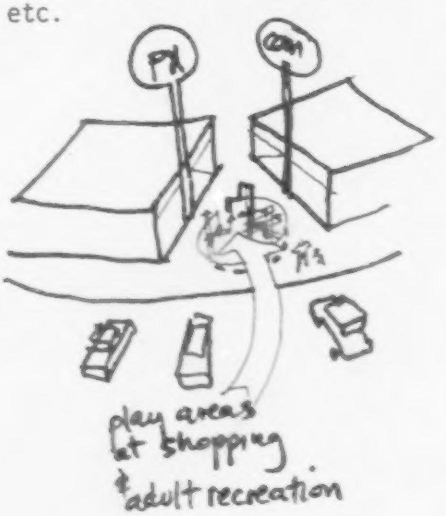
- Barriers in child scale give children privacy without interfering with desired visual contact with parents.



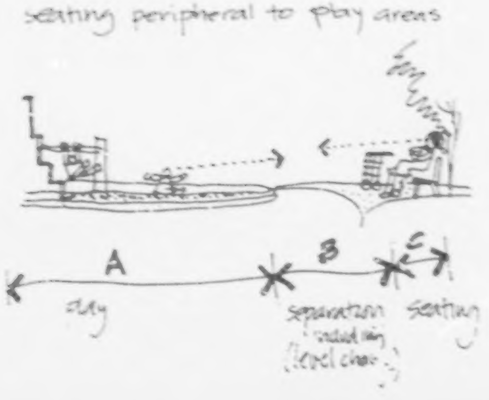


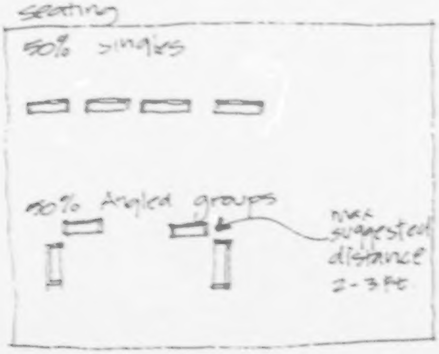

raised
adult
"oversee"

- Adult or older-child areas may be raised slightly to "oversee" small-child play.
- Small-child play areas should be located in conjunction with adult recreation, shopping, etc.

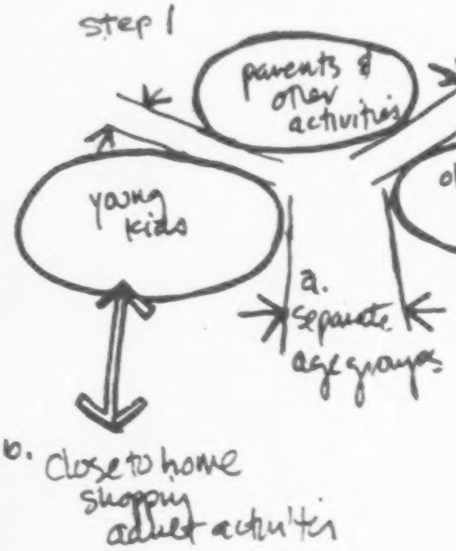

PX
Com
play areas
at shopping
& adult recreation

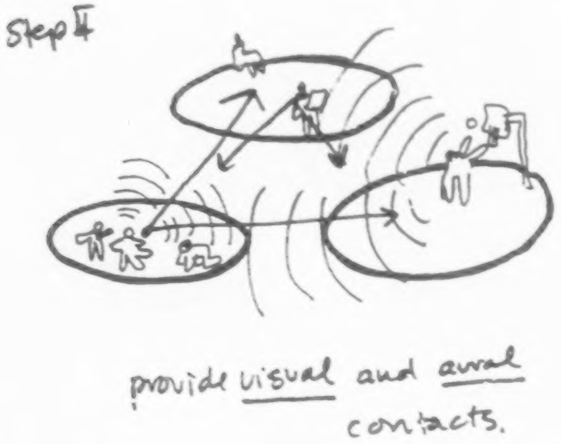
- Adults and older children should have places to be in, things to do, where they can "keep an eye on" small-child play space.
- Provide seating at every playground at a minimum of one seat per 200 sq. ft.
- Seating should be peripheral to the play areas.
- 50% of seating should be single, 50% should be grouped.
- Groups of benches should be arranged at right angles to one another to encourage adult interactions.


seating peripheral to play areas
A
B
C
play
separation
[illegible]
level change
seating


seating
50% singles
50% Angled groups
max
suggested
distance
2-3 ft

- Provide an interface between play areas for young children and older children and adults. The characteristics of that interface would include:
  - defined edges (not chain link fencing)
  - clear entry points
  - buffering
  - seating


step 1
parents & other activities
young kids
older kids etc.
a. separate age groups
b. close to home shopping adult activities


step II
provide visual and aural contacts.

RELATED ITEMS PROXIMITY OF PLAY ACTIVITIES
SPORTS AREAS
NETWORK OF PLAY

708 WATER PLAY AREAS

ISSUE

IN A CHILD'S EXPERIENCE OF NATURAL ELEMENTS, WATER PLAY IS AN IMPORTANT ACTIVITY, ALONE AND IN CONJUNCTION WITH OTHER ELEMENTS (E.G., SAND, DIRT, PLANTS, ANIMALS).

JUSTIFICATION

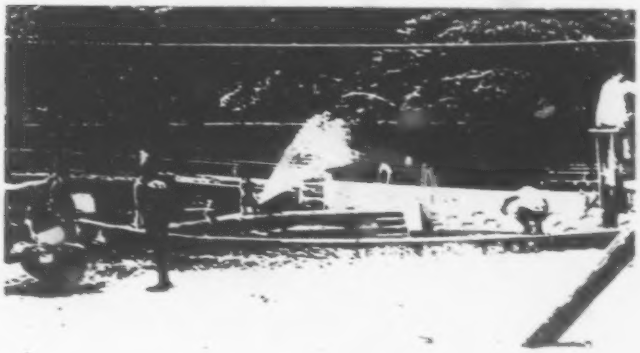
John T. Lyle (1970) in an article, "People-watching in Parks," found that in all park settings observed "water was an important attractor."

Robin Moore (1974), in analyzing children's reactions to Thousand Oaks Playground in California, discovered the following:

> *Water seems to be a powerful multi-purpose place maker--for contemplation: "I like the pond because just looking at the pond makes you feel something inside;" and for play: "I like it when you can jump over the fences and play in the water with your rainboots on and get to the middle" (there was an island in the larger pond); "You go in there and play like you were in a ship or something and you can get to play with the frogs."* (p. 637)

> *A powerfully evocative natural element such as a pond provides a good vehicle for the expression of values: "I like the pond because they're going to put fishes and frogs and stuff in there so we can take care of them, and we're really going to take care of that pond 'cause I don't want nobody throwing papers and stuff. It can be pollution in the water."* (p. 637)

The team observed the outstanding popularity of water play for all ages in the Heckscher Foundation Playground in Central Park, the Huntington Beach Adventure Playground in Los Angeles, and Children's Village in Toronto, (Travel Report, 1978). Conversely, we heard many times how the availability of water play would greatly improve play experiences (e.g., Irvine Adventure Playground, Travel Report, 1978).

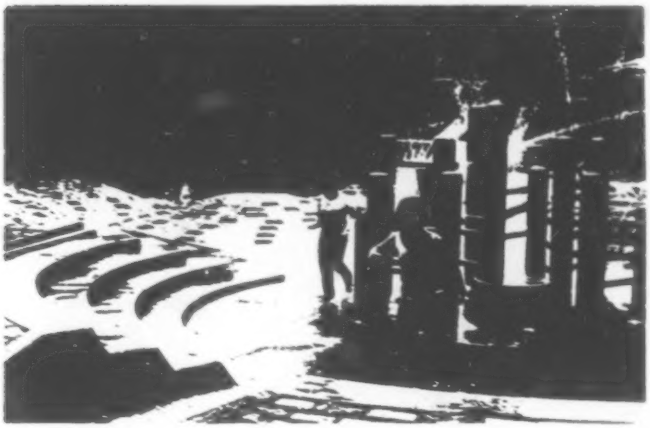


Water areas, then are attractive to people of all ages and can be a focal point for a whole neighborhood. Water can make play areas more attractive to adults and may help promote adult gatherings at playgrounds.

For play, water is one of the most attractive and useful elements:

> *Playing with water should be an integral part of the play program. Water is soothing, clean, and full of surprises. It splashes. It moves. It bubbles, gurgles, spills, runs. It brings one back to those*

> *earliest months of life when playing in water while being bathed was one of the highlights of almost every day. It was the time, really, for first learning about play. It was a time for laughing and touching and close human interaction. It was a time for being held close, for being warm afterwards, and for being fed. And the buoyancy of the water offered a bodily sensation that was different from those experienced during any other waking activity. This sensation brought about an unusual sense of freedom, security, happiness, and well-being.* (Cherry, 1976, p. 114)



Various sources suggest ways to introduce water into the play area such as having pools, fountains, play streams, hand pumps, mounted faucets, and sprinklers (Central Mortgage and Housing Corporation, 1978).

> *Water is as much liked by small children as sand. They are especially delighted when they can play and "muck about" with sand and water at the same time. . . . For playing with water, various possibilities can be considered: in playgrounds where bathing facilities for small children are not wanted or are unsuitable, a little drinking-fountain is sufficient, perhaps a simple*

concrete trough, a hollowed-out stone block or a tree trunk (see page 68). Here the children can fill their buckets with water or float their paper boats. (Ledermann and Trachsel, 1968, p. 11)

Water is one of the joys of childhood; its endless possibilities for play should be fully exploited. A reasonable way to do this is to have tanks at varying heights connected by falls or channels with a circulation completed by a simple pump. The polls could otherwise be static, but would need to be cleaned out regularly. As the water would never be more than nine inches deep, this would be a simple operation. The highest tank might be at child's eye level--for sailing little boats; a tank below for paddling; and at ground level a splash only an inch or so deep. Whether it is advisable to have sand-pits near the water source is open to opinion, but sand and water together make an entrancing mixture for children. (Lady Allen, 1968, p. 37)

Outside, water play becomes freer. A garden hose is helpful for playing car wash, fireman, plumber. A spray nozzle attachment lends itself to elaboration on these themes and others as it becomes a cosmic-ray gun, a rainstorm during a camping trip, a fountain. A wading pool is a place for sea divers, sailing to China, splashdown. A bucket of water with a wide paintbrush enables a child to paint fences, houses, cars. A tub resting on two orange crates is the right height for your preschooler. Sailing boats in the tub and washing doll clothes or toys is fun on very hot days. If the child has been encouraged to develop elaborate make-believe plots, there is less likelihood that the water will be used in aimless splashing or as an agressive material. (Singer and Singer, 1977, p. 156)

Bicycle pumps make delightful bubbles. . . .

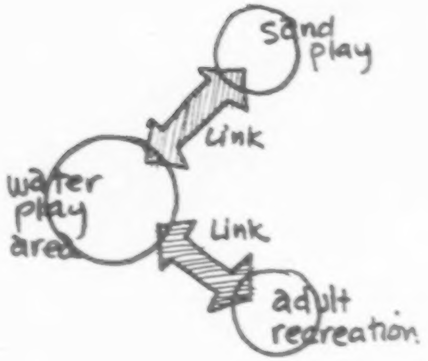
Children also like rain puddles. They like to wade in them, see reflections, and sail paper, wooden, or plastic boats. Sometimes they find earthworms or insects in them. . . .

Painting pavements and fences with large painter's brushes and water-filled paint buckets is a pleasant activity on hot, summery days when things dry out so fast they can be "repainted" many times. . . .

Other forms of water play include watering plants, mixing powdered paints, and sand and dirt play.

Water play should not be without rainbows. After children have observed real rainbows in the sky, show them how to create their own rainbows with water sprayed from a hose. If the sun is shining behind the source of the spray, a rainbow will appear in the *spraying water. If you don't see it readily, manipulate the position of the spray until you do.* (Cherry, 1976, p. 115-116)

PATTERN

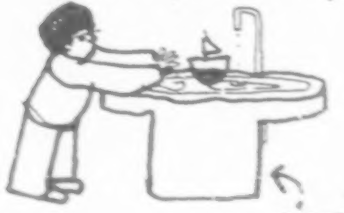


WATER PLAY AREAS

INCLUDE WATER PLAY AS A SEPARATE BUT FLEXIBLE AREA CAPABLE OF BEING LINKED TO SAND PLAY, ENVIRONMENTAL YARDS, ANIMAL PLAY, AND ADULT RECREATION AREAS.

RECOMMENDATIONS

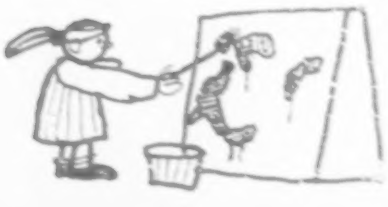
small waterplay areas for preschool play



a sturdy bird bath might be enough

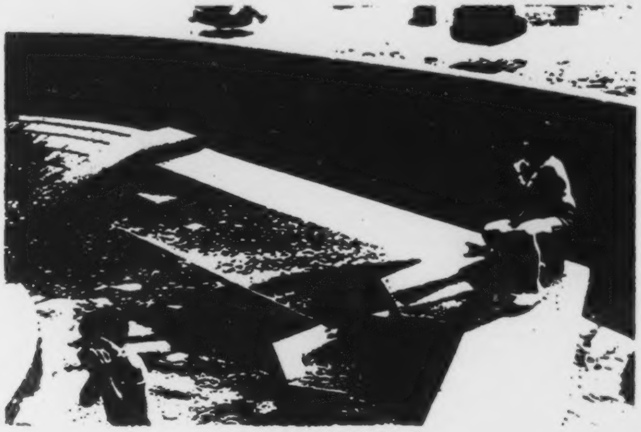
- Include water in at least a minor form in any preschool play area.
- Include more elaborate water play areas where planners wish to encourage adult gatherings.
- Make connections between water play and sand play (wet sand for building), but include methods of separating them if play activities dictate.
- Include water animals as part of water play area if it is large enough for zoning.

paint with water on concrete walls

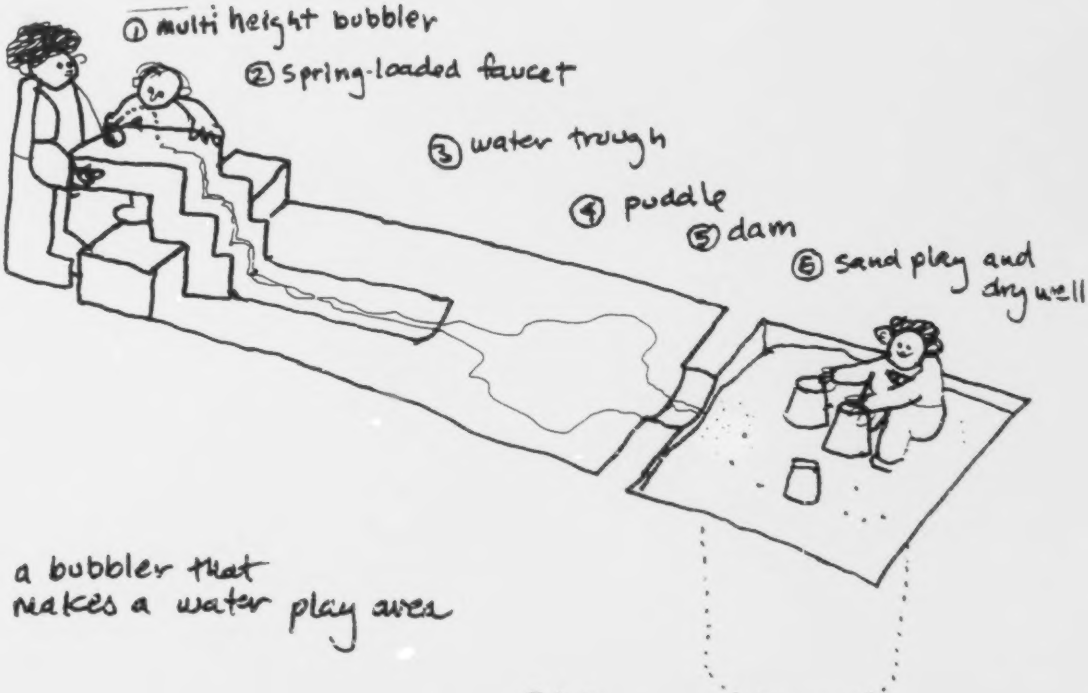


- Provide a concrete wall on which children can paint with water.

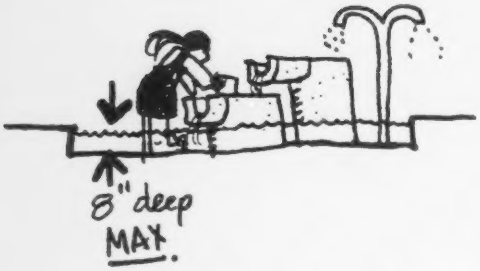
- Plan storage area for equipment used in water play immediately adjoining water play area.
- Provide movable water nozzles and on/off faucets and valves for changeable play.



- Provide outdoor drinking fountains with a designed path for the water to flow (steps or height changes included for smallest children to get their own water). Use spring return valves to control water flow.

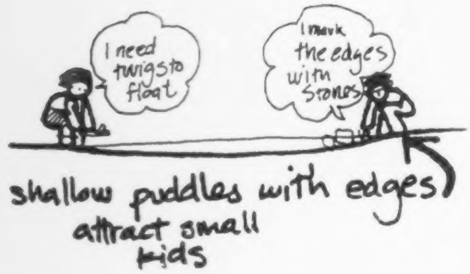

① multi height bubbler
② spring-loaded faucet
③ water trough
④ puddle
⑤ dam
⑥ sand play and dry well

a bubbler that
makes a water play area



- Water should not be any deeper than eight inches.

- Avoid stagnant water (recycle or inexpensively drain away.


I need twigs to float
I mark the edges with stones
shallow puddles with edges attract small kids

- Make slight dishing in pavement surfaces, and provide drips and slight run-off channels in order to provide puddles in the dirt or pavement for play, sliding, and smashing ice).

- Design surfaces in and adjacent to water area which minimize danger of slipping when wet.

RELATED ITEMS	SAND AND DIRT PLAY AREAS LOOSE PARTS LANDSCAPING MATERIALS

709 PROTECTED SAND AND DIRT PLAY AREAS

ISSUE

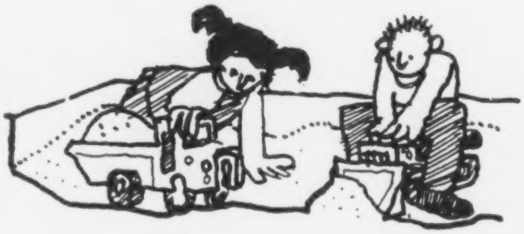
CHILDREN MUST EXPERIENCE NATURAL ELEMENTS, PARTICULARLY ONES WHICH THEY CAN MANIPULATE AND SHAPE, IN ORDER TO FORM UNDERSTANDINGS OF THE WORLD AND THEIR RELATIONSHIP WITH IT.

JUSTIFICATION

Almost everyone can remember playing with or watching children play with sand and dirt by sculpting it into towers and houses, burying things, and making hills, rivers, and mud pies.

All sources agree that sand play is an essential experience for young children. As mentioned in LOOSE PARTS, they need to be able to manipulate and shape their environment, to feel various textures, see colors, build, revise, learn. In addition, the many forms of sand and dirt, the kinds of rocks to be discovered, and the small life forms encountered (worms, insects) all provide learning experiences.

Wood (1976), in "Early Mound Building: Some Notes on Kids' Dirt Play," found the following:



> *The role occupied by sand-dirt in play . . . lies principally in the fact that sand and dirt resemble nothing in the world but sand and dirt. Sand and dirt denote nothing not denoted by the kids except for its single inherent and self-denoted ability to foster growth.* (p. 26)

R. Burton Litton, Jr. (1969) in "Ode to the Vacant Lot," suggests that dirt and grass combined have another use:

> *For group action, grass fights are the thing. Technically, the projectile is root mass with dirt attached; the stems are the handle, a humane weapon with high trajectory and low speed.*

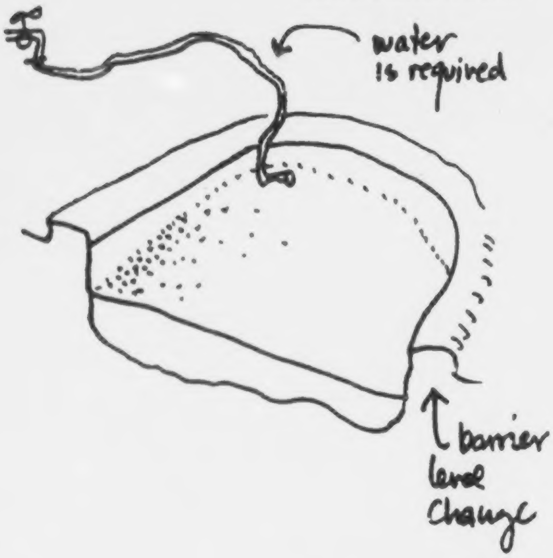
PATTERN

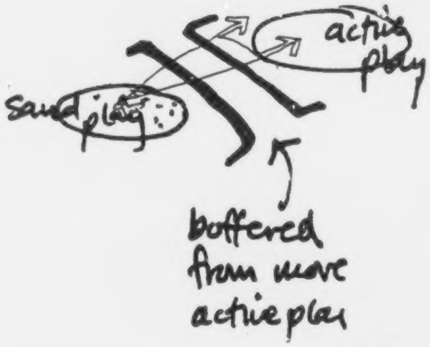
PROTECTED SAND AND DIRT PLAY AREAS

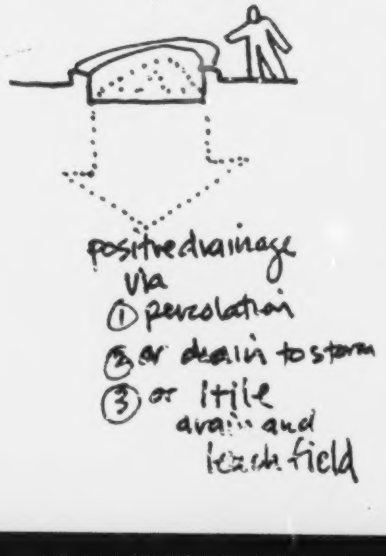
ALL PLAY AREAS SHOULD HAVE PROTECTED, SPECIFIC SAND/DIRT PLAY AREAS WITH SUN/SHADE MIXTURE IN SUMMER, STORAGE FOR PLAY EQUIPMENT, AND A WATER SOURCE AVAILABLE.

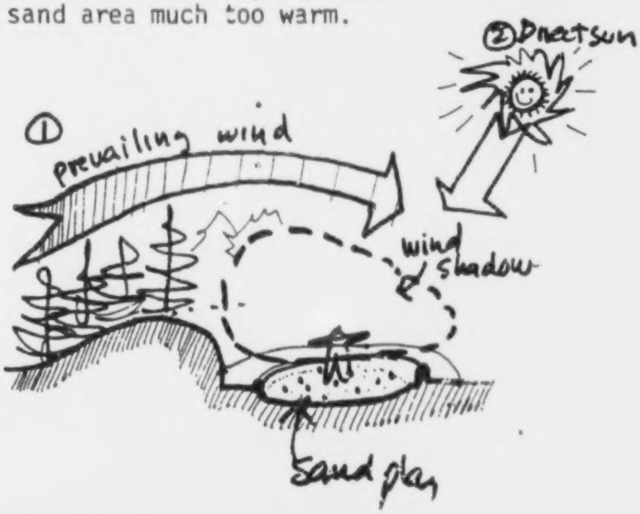
RECOMMENDATIONS

- Include sand play areas in all play spaces which will be used by younger children.
- Sand should be mixed with water for best "buildability" (Lady Allen, 1969).
- Sand should be contained with some type of barrier-level changes, walls, etc. (Bengtsson, 1970).
- Sand areas should be protected from more active pursuits (see CIRCLES AND WEDGES).
- Sand areas should be easily maintained and easy to clean so that children aren't hurt by glass, sharp metal, etc., and so that the sand isn't dirtied by animal droppings.
- Sand areas must be planned so that positive drainage is obtained.
- Sand areas must be protected from wind--blowing dry sand is very unpleasant.
- Sand areas should receive direct sunlight for part of the day for "purifying." But direct sun at midday in summer will make a sand area much too warm.

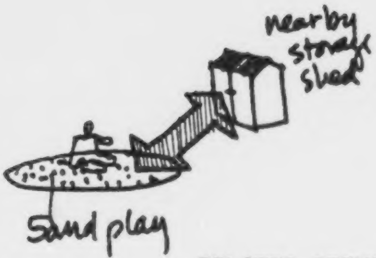

water is required
barrier level change


active play
sand play
buffered from more active play


positive drainage via
① percolation
② or drain to storm
③ or tile drain and leach field


① prevailing wind
② Direct sun
wind shadow
Sand play

Build in a wind shadow so sand isn't blown around



- Sand requires periodic renewal. It should be varied as to texture and color if possible. For smallest children, make sure quartz sand is round-edged.
- Sand areas need near-by storage areas for shovels, rakes, buckets, etc.

RELATED ITEMS	CIRCLES AND WEDGES LOOSE PARTS WATER PLAY LANDSCAPING MATERIALS

710 PLAY ABOVE THE GROUND

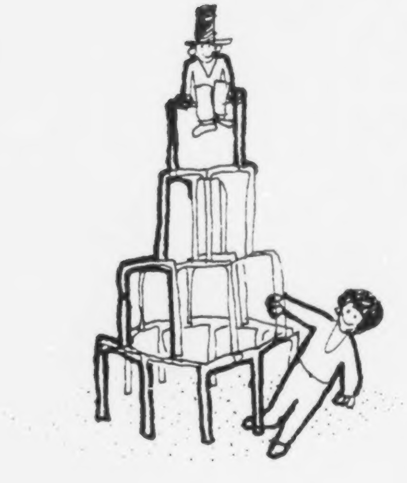
ISSUE

CHILDREN LOVE TO CLIMB AND REACH HEIGHTS WHERE THEY CAN GAIN A NEW PERSPECTIVE ON THEIR SURROUNDINGS. FOR CREATING "CHALLENGE WITHOUT UNDUE RISK," AND FOR PROVIDING NOVELTY AND STIMULATION IN PLAY AREAS, CHILDREN MUST BE ABLE TO PLAY AT VARIOUS HEIGHTS ON VARYING SURFACES--STRUCTURE, BERM, TREE, ROPE, ETC.

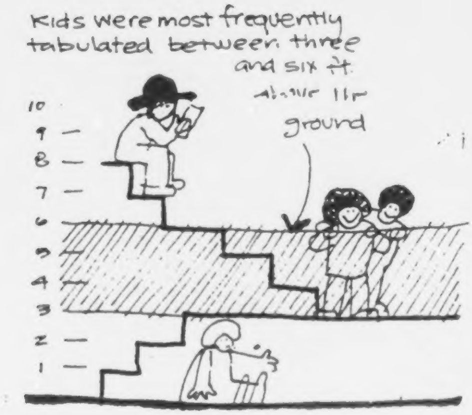
JUSTIFICATION

With regard to the importance of play above the ground, Cherry (1976) says:

> *If I had room for only one piece of play equipment, my unhesitating choice would be something to climb on. As soon as seven- or eight-month-old infants start to creep, they climb over any objects they can that get in their way. They are very adept at learning to manage differing heights. They have an innate sense of depth perception from about the age of nine months. Climbing strengthens muscles, develops postural control, and orients children to varying views of the world. The area that a child can take in with one glance becomes much greater as the body climbs higher. For small children who spend so much time having to look "up" it must be an exhilirating experience to be in places where the view is "down." The resultant feelings of mastery have positive ego-building effects. Few experiences can make a child feel so important as sitting on top of a jungle gym--particularly if he is wearing an adult-type play hat that makes him even taller."* (p. 53)



> *Climbing activity is basic to development of gross motor skills, particularly body control and coordination of the hands and feet for balancing on uneven, changing surfaces. A great variety of climbing experiences can be offered on the playgrounds by utilizing both rigid surfaces, such as rocks or trees, and flexible ones, such as ropes or tires."* (Hewes, 1975, p. 130)


Kids were most frequently tabulated between three and six ft above the ground
10
9
8
7
6
5
4
3
2
1

Observational research done by Leland Shaw showed that:

> *Children enjoy playing in groups above the ground plane. Children were most often tabulated occupying the three feet to six feet horizontal section of space.* (Shaw,(n.d.) p. 5)

Research done by Karlsson and Ellis (1972) showed that height preferences of children at play was inversely related to the complexity of the equipment, and that height preferences did not vary appreciably with increased age.

Climbing and play above the ground is developmentally important to children from nine months up.

Bengtsson (1970) lyrically describes the experience:

> *Climbing a hill, climbing a tree, climbing up onto a big rock, reaching new heights, exploring new worlds, daring more than the others, daring to do more than one thought one could do. These are activities and ambitions inseparable from children's play, and they are certainly of considerable importance in the development of personality. Risk is a stimulus, and should be present in some form even in the playground. . . . Play with ropes has become quite a marked feature of the more recent avant-garde playgrounds in England. It is often of the "Tarzan" variety. You swing by ropes from tree to tree, or from one platform to another. Its popularity is unbelievable and it attracts young people up to twenty years years of age. Such games can be very advanced and naturally not without danger if equipment and method of suspension are not carefully supervised. This type of play can be arranged to offer varying degrees of difficulty, so that even the very young children are catered for.* (p. 192 and 206)

Numerous sources agree that climbing and play above the ground should be "graded" so that all children can experience the activity at their own developmental level (see PACED ALTERNATIVES). Safety is another issue which concerns parents and administrators (see CHALLENGING ENVIRONMENTS WITHOUT UNDUE RISK).

PATTERN

PLAY ABOVE THE GROUND

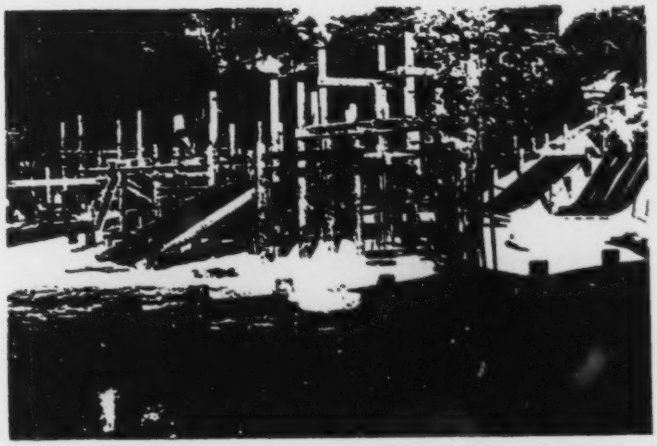
CHILDREN MUST BE ABLE TO PLAY ALONE AND IN GROUPS IN A CHALLENGING BUT SAFE ENVIRONMENT ABOVE THE GROUND.

RECOMMENDATIONS

- Provide challenges, climbing, and resting experiences above the ground at many height levels and complexity levels.
- To maximize the response to children's preferences, simple climbing equipment such as steps and bridges can be higher than complex equipment such as mazes and rich natural terrains.
- Provide places above the ground where small groups can play together. This may be tied with the need for an observing space in "NESTS FOR QUIET PLAY."
- Use "houses," castles, towers, trees, platforms, nets, ropes, steps--a variety of climbing situations and places above the ground so that children can choose the challenge and excitement they are ready for. A single kind of climbing device on a playground is too limiting (e.g., the old jungle gym).

RELATED ITEMS

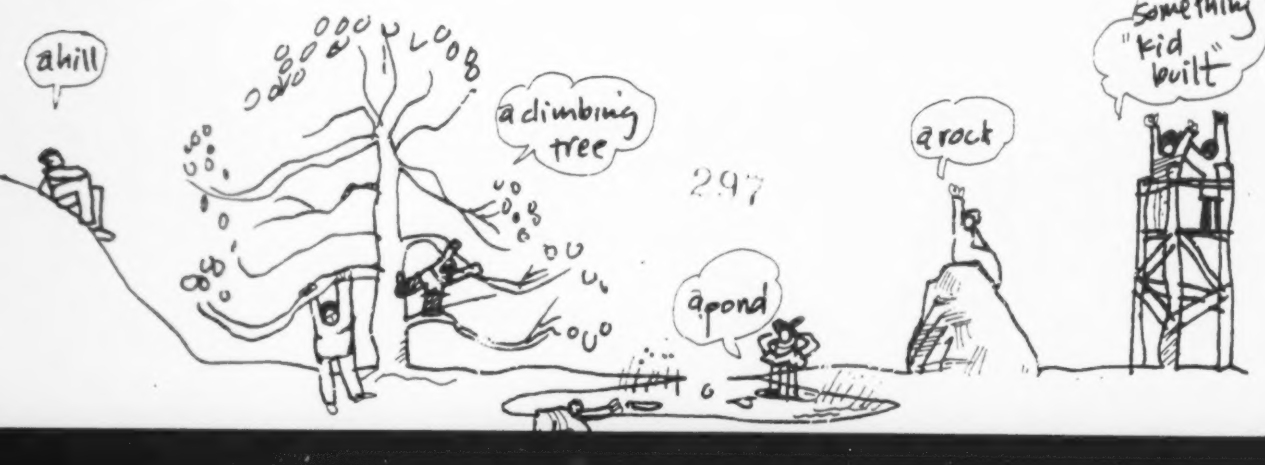
NESTS FOR QUIET PLAY
CHALLENGING ENVIRONMENTS WITHOUT UNDUE RISK
PACED ALTERNATIVES
DESIGNATED PLAY STRUCTURES



711 PLAY AREAS AS CHILDREN'S LANDMARKS

ISSUE	CHILDREN NEED TO SENSE THAT THE PLAY AREA IS "THEIR TERRITORY," EVEN WHEN REMEMBERING IT OR VIEWING IT FROM A DISTANCE.
JUSTIFICATION	Developmentally, children need to establish their "own" place. A place away from the home is important to small children in establishing their own separate identities and psychological independence. If a play space can help meet this need, it must have an image, a readily-perceived character which sets it apart from surrounding adult spaces where children may fear adult prohibitions, and that character must clearly say, "This is children's territory."
PRINCIPLE	PLAY AREAS AS CHILDREN'S LANDMARKS SOME ASPECT OF THE PLAY AREA MUST HAVE A STRONG, EASILY-REMEMBERED IMAGE THAT MAKES IT A LANDMARK TO CHILDREN
RECOMMENDATIONS	• A play structure, a climbing tree, a hill, a pond--each may be strong enough to provide an identifying image. • A tall feature which is visible from a distance, and from which children can view surrounding areas can be a powerful symbol or "touchstone." • The identifying symbol or image can be something of the children's making.

memorable features



712 CLEAR ACCOMPLISHMENT POINTS

ISSUE

CHILDREN MUST PERCEIVE THEIR OWN SUCCESSFUL DEVELOPMENT AND ACCOMPLISHMENT AT TIMES IN ORDER TO DERIVE SATISFACTION, BUILD A POSITIVE SELF IMAGE, AND INCREASE THEIR SELF CONFIDENCE.

JUSTIFICATION

Children are constantly being confronted with all the things they don't know. Young children in particular ask questions constantly. In order not to discourage and frustrate children with the vast amount they have still to accomplish, they must have very clear evidence of success at various points in their development. Success gives children positive feelings about themselves and their ability to continue to develop and eventually "grow up." Frustration only breeds failure (as any teacher of a fourth-grade non-reader will tell you).

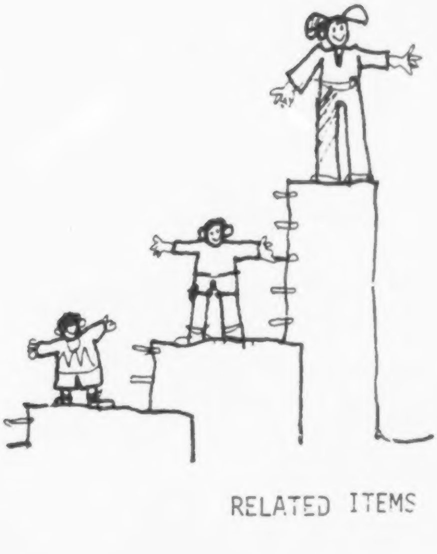
PRINCIPLE

CLEAR ACCOMPLISHMENT POINTS

RESPONSIVE ENVIRONMENTS SHOULD INCORPORATE RECOGNIZABLE STAGES OF REQUIRED PERFORMANCE, CLEAR POINTS OF COMPLETION, AND PUBLIC DISPLAY OF PERFORMANCE.

RECOMMENDATIONS

- Provide clear stages of accomplishment in physical activity spaces (e.g., climbing ropes at several different heights, ladders or other climbing apparatus with several platforms at various heights.
- Provide a positive signal at the point of destination or accomplishment (e.g., a bell to ring at the top of the climbing apparatus).
- Immediate display places in building and arts and crafts area would signal "I'm done -- look!"
- In any activity area, provide stages of difficulty so that children can choose goals which they can accomplish.



RELATED ITEMS

PACED ALTERNATIVES

713 RETREAT AND BREAKAWAY POINTS

ISSUE

CHILDREN OCCASIONALLY NEED SOLITUDE FOR SELF-KNOWLEDGE AND SELF-CONTROL. THEY NEED TO BE ABLE TO GET AWAY BY THEMSELVES FROM TIME TO TIME TO THINK, REGAIN CONTROL, AND ESCAPE FROM A TOO-INTENSE PLAY SITUATION.

JUSTIFICATION

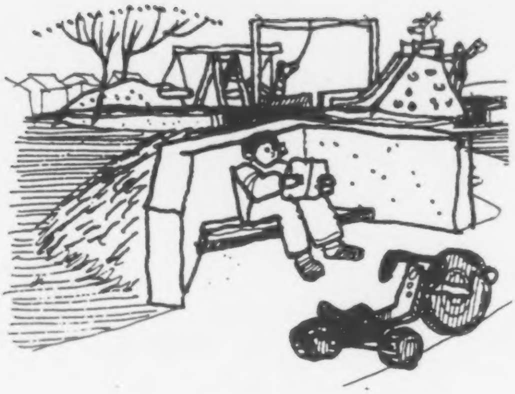
The provision of retreat areas is crucial to the development of self-concept and personal identity. When children are alone they have to come to terms with self, how the "I" relates to a tree, space, or the self. Being alone is more conducive to imagination, adding hypothetical activity and meaning to a simpler situation. In opposition to retreat is the need for children to learn their role in society, but a child must sometimes retreat to solitude when confused or overwhelmed by society. Good breakaway points encourage greater exploration by providing face-saving exits from unfavorable situations.

There are two aspects to this problem:

> *There are occasions when an individual or even a group need to get away from it all. The bustle of other people sometimes can crowd or frustrate a person. An ideal retreat is neither too close nor too far from others and provides privacy and the opportunity for observing the behavior of peers and for imaginative or other quiet activity.*
>
> *A more immediate need to escape can come from entering a too-challenging or unenjoyable activity. If the child wants to leave the activity and there is no way out other than completing the activity, panic or fear may overcome the child. A way out of ongoing activities which would maintain the child's positive self-concept is needed.* (Moore, Cohen, and Team 699, 1977, p. 82)

Supporting research on areas for RETREAT and UNOBTRUSIVE OBSERVATION/CHILD RETREAT CORNERS (Criteria Document--Child Support Services, 1979), has found that the number of children observing others' play was equal to or greater than the number of those actively playing (Hale, 1966; Department of the Environment, 1973; Cooper, 1975).

Arvid Bengtsson (1970), Past-President of the International Playground Association, says of current playgrounds:



> *We are too concerned that every corner should be in full view, and this can make children go and play somewhere else. . . . Must we really know everything and control everything in a child's life? Nobody imposes anything like the same interference on the country child. They have haystacks, barns, woodlands, and so on, and no one sees anything dangerous to society in that.* (p. 154)

The need for RETREAT AND BREAKAWAY POINTS is especially acute for handicapped or exceptional children for whom a task already attempted may be too difficult; a face-saving exit can be of great assistance in retaining a positive self-concept.

PATTERN

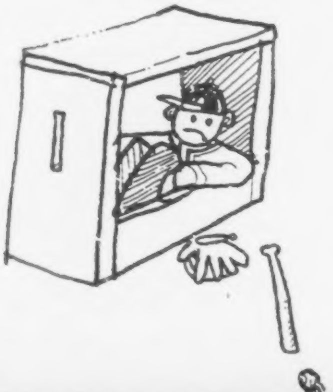
RETREAT AND BREAKAWAY POINTS

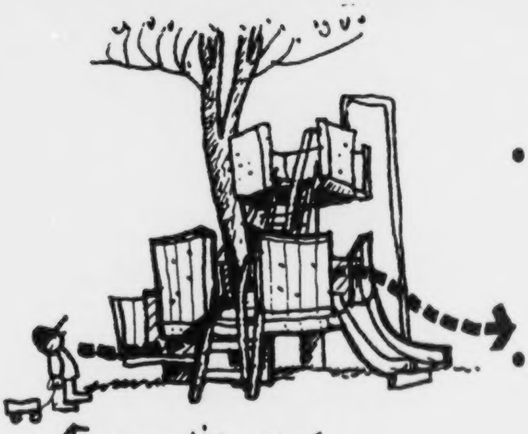
SHELTERED, SEPARATED SPACES WHICH ARE LARGE ENOUGH FOR ONE PERSON ONLY, LOCATED IN VARIOUS PARTS OF THE PLAY AREA WILL PROVIDE NECESSARY RETREAT POINTS FOR CHILDREN. PROVISION MUST ALSO BE MADE FOR A CHILD TO LEAVE BEFORE COMPLETING AN ACTIVITY WITHOUT FEELING AS A FAILURE.

RECOMMENDATIONS

- Settings should provide a child with the opportunity to gain and maintain personal privacy in their own sheltered world.
- Private spaces which are connected to larger activity areas should enable a child to get away from the group.
- Provide watching stations in child scale overlooking activity areas, e.g., small tree-houses, tower platforms, landscaping railroad ties.

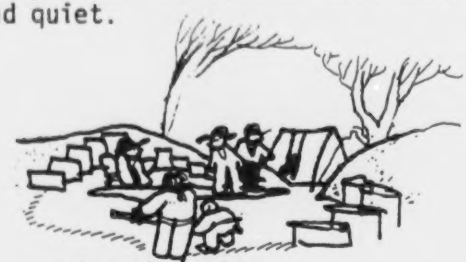
places for one kid!





alternative ways to "get out" of too challenging situations

- Provide breakaway points within an activity, (e.g., a ladder might have access to two platforms before reaching the top level, thus permitting children to stop at any stage while they are overcoming fears of height and gaining climbing abilities).
- Opportunities should exist for groups of exceptional children to have seclusion and quiet.



group quiet play

RELATED ITEMS NESTS FOR QUIET PLAY
RANGE OF SOCIAL SCALE

714 VARIETY OF 3-DIMENSIONAL SPACES

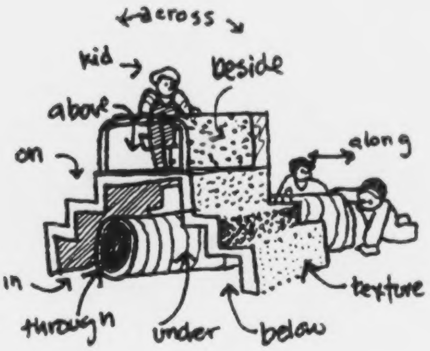
ISSUE

TO ASSIST IN THE AWARENESS OF SPACE AND IN STIMULATING PERCEPTUAL AND MOTOR DEVELOPMENT, CHILDREN SHOULD BE ABLE TO EXPERIENCE A VARIETY OF SPACES THROUGH DIFFERENT SENSORI-MOTOR AND LOCOMOTOR ACTIVITIES. BEING IN AND MOVING THROUGH DIFFERENT TYPES OF SPACES PROVIDES A RICH VARIETY OF SPATIAL EXPERIENCES.

JUSTIFICATION

In order to relate to large and small environments, a child must become aware of space and learn spatial concepts such as over/under and in/out through various locomotor activities. Early development of the perception of depth, for example, depends on texture and shadow (Bower, 1965; Pick and Pick, 1970) which therefore are important in all children's environments. The development of directionality, based on laterality, is dependent on the kinesthetic experiences of moving the body through a variety of three-dimensional spaces (Kephart, 1960). To become cognizant of more complex spatial environments--like buildings, neighborhoods, and cities--the child must become aware of spatial relations such as the topological, projective, and euclidian concepts of open/closed, left/right, near/far, and precise physical distances, etc. (Hart and Moore, 1973). Developmentally, a child organizes spatial relations around egocentric references (the child's position in space), fixed references (familiar places), and abstract reference systems (geometric and cardinal references) as they develop through three principle stages of environmental cognition (Moore, 1976).

variety of spatial experiences



To assist the child in these important cognitive developments, two things are necessary: first, the opportunity for a range of spatial experiences; and second, specific environmental stimulation. The opportunity for falling, a sometimes fearsome, frustrating, and humiliating activity, is an important example of the kinds of experiences so vital to the development of spatial awareness and subsequent continued development of various motor developments (Handicapped Adventure Playground Association, n.d.).

To directly stimulate the child, the environment--both indoors and outdoors--can be structured to motivate exploration and movement through a series of developmental stages. Examples include the provision of a variety of spaces having the following properties: on, beside, behind, over, in, along, under, before, between, through, against, around, across, by, from, toward, above, below, and so on, organized in terms of topological, projective, and euclidian progressions. Other examples include the provision of texture gradients, shadow patterns, other visual perceptual cues (see Hesselgren, 1975; Prak, 1977), a variety of fixed reference points, and alternative, clearly-articulated abstract reference systems (see Hart and Moore, 1973; Moore, 1976).

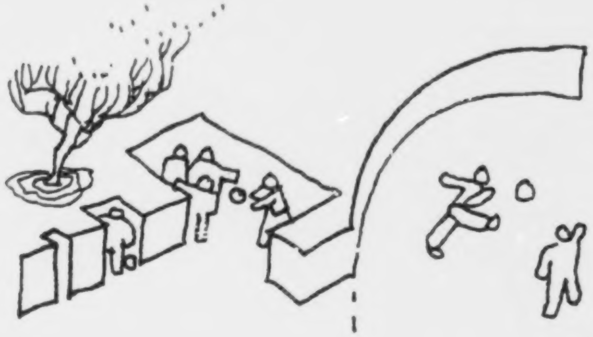
PRINCIPLE

VARIETY OF 3-DIMENSIONAL SPACES

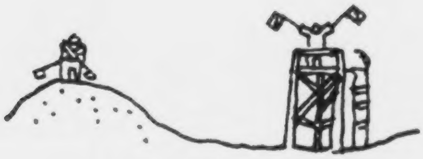
THE ENVIRONMENT SHOULD BE STRUCTURED TO MAXIMIZE A VARIETY OF DIFFERENT 3-DIMENSIONAL SPACES AND INTERRELATIONS BETWEEN SPACES.

RECOMMENDATIONS

o All environmental scales should provide for a variety of spatial experiences.

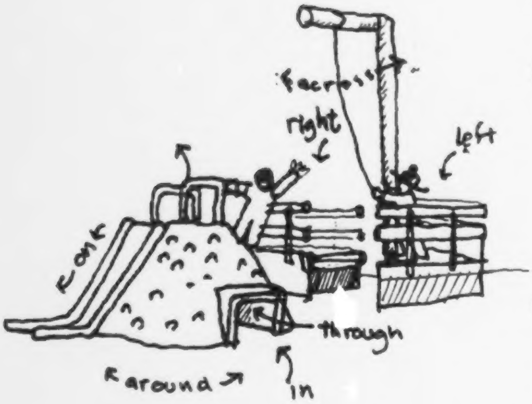


variety of scales of spaces



high places

- High places, knolls, and towers with views of activity should be provided.
- Some crawling should be required in many different sized boxes, cubes, and squares.
- Depth cues such as texture, shadows, and others should be included in all portions of the environment.



- Opportunities should be provided to fall safely.
- A variety of locomotion experiences (up/down, under/over, etc.) should be provided for infants and older children, and should be organized to present a full range of topological, projective, and euclidian concepts to the child directly through experience.
- A variety of fixed reference points should be provided in the child's environment to aid in the development of an overall cognitive map of the environment.

RELATED ITEMS

CONTINUITY AND BRANCHING
PACED ALTERNATIVES
PLAY ABOVE THE GROUND
CHALLENGING ENVIRONMENTS WITHOUT UNDUE RISK

715 SMALL ARTS AND CRAFTS NOOKS

ISSUE

ARTS AND CRAFTS HAVE A VARIETY OF PURPOSES FOR THE DEVELOPING CHILD INCLUDING INTELLECTUAL, PHYSICAL, AND EMOTIONAL GROWTH. INDEPENDENCE AND CREATIVE EXPRESSION WILL BE BEST ENHANCED BY WELL-DESIGNED AND WELL-EQUIPPED AREAS.

JUSTIFICATION

> *There are so many things that children learn through art experiences that are appropriate to their age that it would be close to impossible to enumerate them all.* (Cherry, 1976, p. 194)

Cherry then gives a list of cognitive values such as learning thick and thin, wet and dry, etc., and physical values such as hand-eye coordination.

Shure's (1963) finding that active social interchange is relatively low in art areas, and Housman's (1972) finding that art areas are associated with low conflict levels, have definite implications for planning arts and crafts areas. The resultant assumption is that art areas are places for individual expression rather than intensive social interaction. Further, art areas may be places for children who wish to retreat from the social milieu for periods of time.

Successful outdoor art areas observed by us (see Pacific Oaks College Children's School, Travel Report, 1978) were adjacent to indoor art space. Parts of the outdoor area were sheltered from excessive wind, sun, and precipitation. Porch-like areas or wide roof overhangs, if sited appropriately away from prevailing winds, can provide the necessary shelter. Partial shelter, storage, and a water source are useful in an outdoor art area. Protection from more physically active outdoor play is also needed.

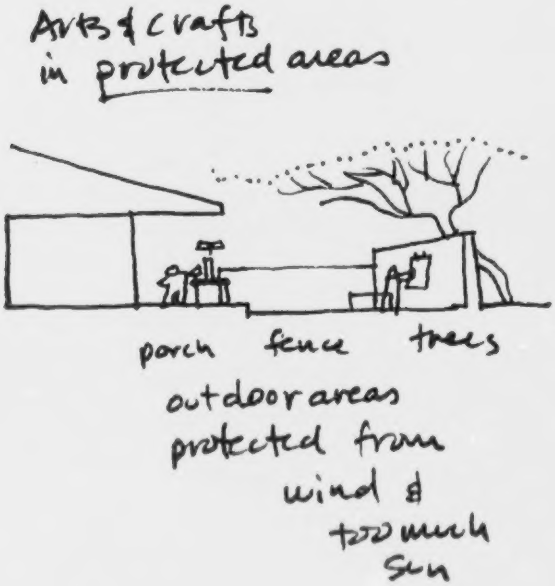
PATTERN

SMALL ARTS AND CRAFTS NOOKS

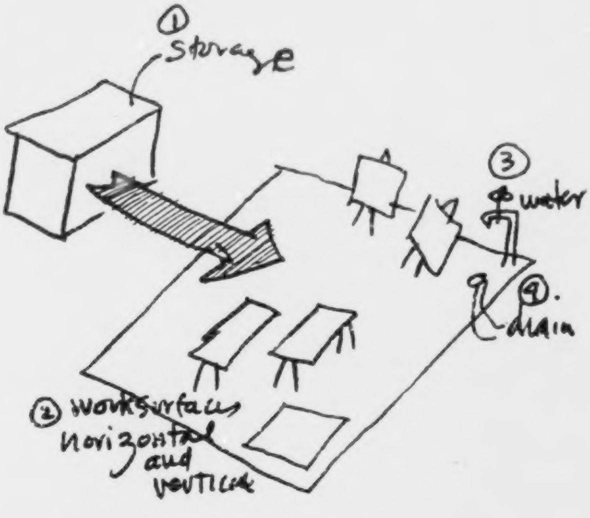
WHEREVER INDOOR SPACE IS AVAILABLE ADJACENT TO A PLAY AREA, IT MAY BE APPROPRIATE TO INCLUDE AN OUTDOOR ARTS AND CRAFTS AREA. PROVIDE SHELTER, STORAGE, WATER, AND A PROTECTIVE SEPARATION AS APPROPRIATE.

RECOMMENDATIONS

- Art areas must be protected from circulation routes and other activities which will disturb individual involvement.
- Site outdoor arts and crafts areas with consideration for providing shelter from winds, extreme sun, and precipitation.


Arts & crafts
in protected areas
porch
fence
trees
outdoor areas
protected from
wind &
too much
sun

- Provide natural light, though only filtered sun.
- Art areas should include horizontal and vertical work surfaces for drawing and construction.


① storage
③ water
④ drain
② worksurfaces
horizontal
and
vertical

- Art areas should include storage for supplies, unfinished work (both two and three dimensional) and drying racks.
- Site art areas nearby surfaces impervious to clay, paint, etc.
- Site art areas near a water source.
- Provide display space for two and three dimensional work.
- Lockable art storage should be accessible to children.
- Outdoor art areas should be adjacent to indoor space.

RELATED ITEMS

FAVORABLE MICROCLIMATES
NESTS FOR QUIET PLAY
LANDSCAPED BARRIERS
POSITIVE DRAINAGE
DEGREES OF SHELTER

716 STAGES AND PROPS

ISSUE

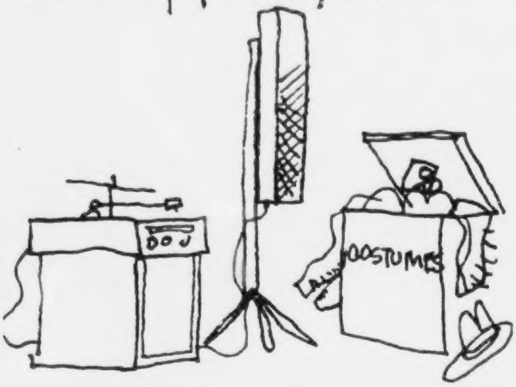
CHILDREN MUST BE ABLE TO EXPERIENCE FANTASY, MAKE-BELIEVE, AND DRAMATIC PLAY AS A FUNDAMENTAL PART OF THEIR DEVELOPMENTAL GROWTH.

JUSTIFICATION

Children expand their experiences of the world and people in it by creating "mind-dramas" with settings, characters, and plots which incorporate familiar and unfamiliar elements. Fantasy play, dramatic play, role-playing, imitation, and creative expression are all important activities for young children. By role-playing, children can understand others better and increase social skills. By imagining unfamiliar places and props, children explore their environment widely. According to Claire Cherry (1976):

> *Dramatic play offers children safe ways to explore their awareness of their own growing abilities and changing roles and their relationship to otners, . . . a means of expressing antisocial ideas and impulses . . . responding to their ongoing need for creative expression.* (pp. 217-218)

availability of music/costumes

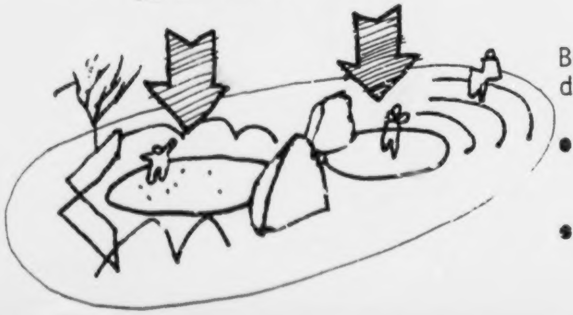


Garvey (1977) suggests that objects (or props) for dramatic play can be very ambiguous as children do not need literal props to stimulate imagination. In fact, props which are too specific and static (e.g., a metal rocket ship) will limit the inventiveness of children (Galambos-Stone, 1970).

Bengtsson (1970) suggests that costume, music, and props should be available:

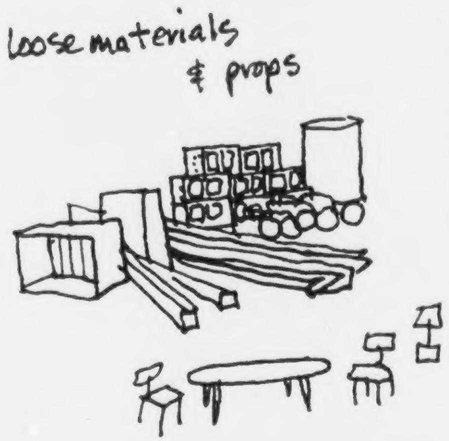
> *A costume, even a rag around the head, makes a child bolder, and a clothes-chest is therefore an important piece of equipment in a playground.* (p. 170)

① private - no audience ② small audience



Bengtsson (1970) also suggests that for dramatic play, two types of areas are needed:

- private spaces without an audience to spoil concentration and imagination
- area for audiences to watch more formal dramatic play


loose materials
& props

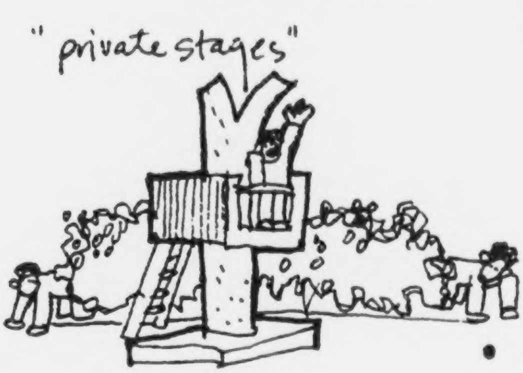
Although defined settings like play houses, mock garages, stores, and bridges allow for planned fantasy games and role modeling behavior, ambiguous settings like a pile of rocks, a wood pile, and a sand box provide open-ended situations which allow the children's imagination to give them meaning (see AMBIGUOUS SETTINGS AND OBJECTS).

PATTERN STAGES AND PROPS FOR ACTING

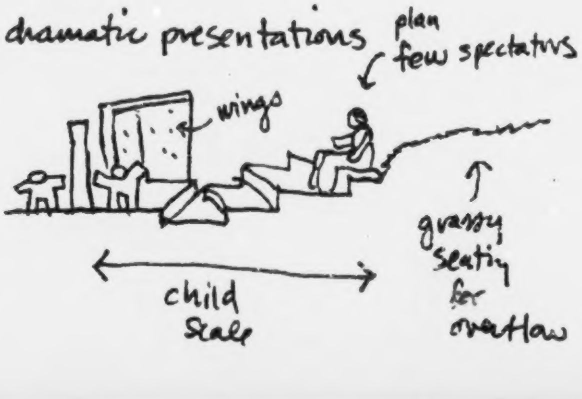
PROVIDE A VARIETY OF STAGES AND PROPS FOR CHILDREN'S ACTING, WHICH INCLUDE SPECIFIC AND CONCRETE SPACES, AS WELL AS AMBIGUOUS ONES, PRIVATE AND SHELTERED PLACES AS WELL AS OPEN AND PUBLIC STAGES.

RECOMMENDATIONS

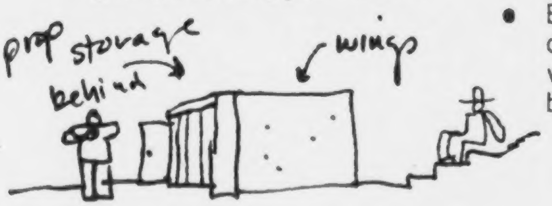
- Provide numerous "private stages" behind bushes, in places under play structures--wherever 2-4 children can play make-believe privately, sheltered from direct adult observation.


"private stages"

- Develop one area which can be (among other things) a stage for drama before an audience. Use child scale here so the area will not be intimidating. Separation of audience and performers may be very slight.

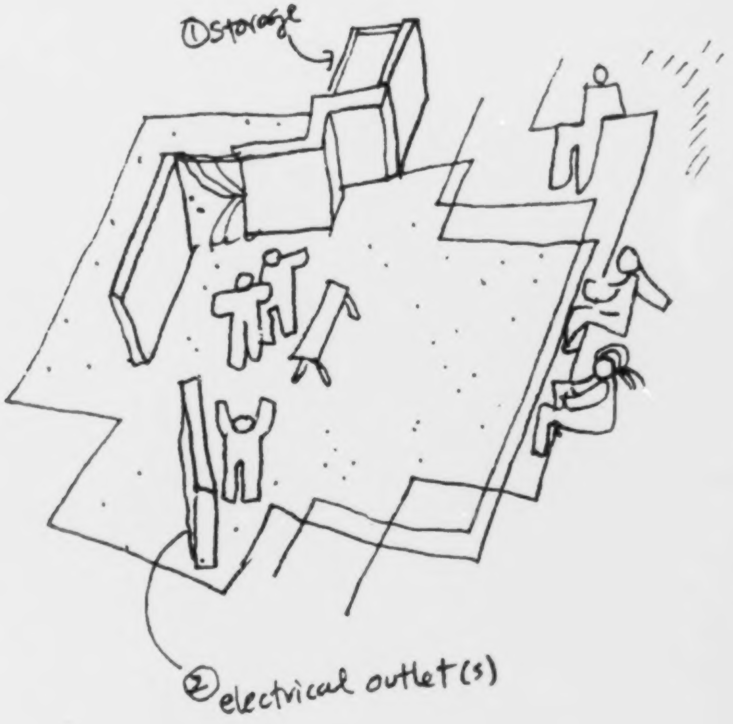

dramatic presentations
plan few spectators
wings
grassy seating for overflow
child scale

include storage in
the dramatic area


prop storage
behind
wings

- Provide props and architectural elements which are ambiguous and able to become many things to many children.
- Ensure storage for props and costumes which can be locked and protected from moisture, vandalism, etc., but is also easily reached by children when unlocked.

have stage wings
that are also
ambiguous play
areas


① storage
② electrical outlet(s)

RELATED ITEMS AMBIGUOUS SETTINGS AND OBJECTS
OUTDOOR STORAGE

717 SUPERVISED FIRE AND COOKING AREA

ISSUE

CHILDREN ARE FASCINATED BY FIRE. TODAY'S CHILDREN WHO LIVE IN APARTMENTS OR HOMES WITHOUT FIREPLACES, ATTEND SCHOOLS WHOSE HEATING PLANTS ARE REMOTE FROM THEIR SPACES, AND WHO SEE FIRE ONLY AS A BLUE-GAS FLAME ON THE STOVE, HAVE LITTLE CHANCE TO LEARN ABOUT FIRE AND ENJOY FIRE PLAY IN A SAFE AND SUPERVISED WAY.

JUSTIFICATION

Observation by John Chase (n.d.) reveals that even though they lack a safe place to experiment, children in high density housing play with matches as a favorite pastime.

In many European playgrounds, fire play is a very important and successful learning experience (Lady Allen, 1968; Bengtsson, 1970; Utzinger, 1970; Ledermann & Trachsel, 1968). Children experiment with many different materials to see what burns, how fast, etc. Just as they learn about other natural elements (Piaget, 1967), children must learn about fire and its uses.

According to Ulf Brammer, Secretary of the Danish Playground Association:

> *A bonfire site is a feature whose value soon becomes clear: first and foremost because it is an exciting element for children to "play" with and gather 'round; and secondly because the playground soon accumulates a lot of combustible rubbish which it is as well to burn. Today children have little chance of developing a mature attitude toward fire unless suitably introduced to it by adults.*

Designers and builders of houses over centuries have recognized the hearth as the central gathering place. On a playground this focal point is also useful. It becomes a place for social interaction. Within this social framework the cooking and sharing of food can be a learning and growth experience. Early childhood teachers all over the world have incorporated cooking into their programs. What is more natural than that cooking also occur outdoors (perhaps near the garden where some of it is grown--see CHILDRENS' GARDENS).

Obviously, playgrounds which have fireplaces must be supervised. Only those where a playleader is present, notably those in conjunction with early childhood development centers and adventure playgrounds, should offer fire play.

PATTERN

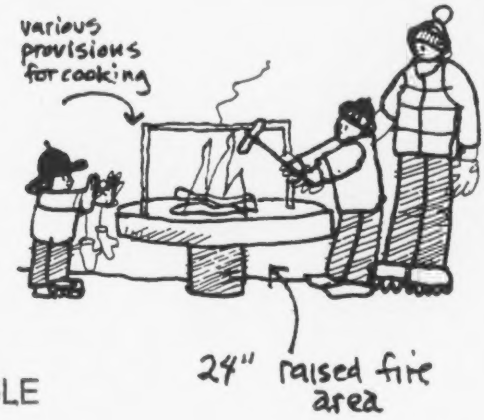
SUPERVISED FIRE AND COOKING AREA

ESSENTIAL FEATURES OF FIRE PLAY AREAS INCLUDE ADEQUATE GROUND AREA TO ACCOMMODATE GROUPS OF CHILDREN, RAISED HEARTHS FOR EASE OF VIEWING, AND SHELTER FROM WINDS.

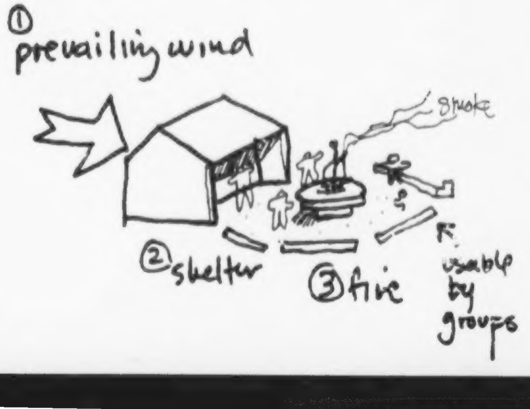
RECOMMENDATIONS

- Offer fire play only where adult supervision is present.
- Plan fire areas away from combustibles.
- Raise the actual fire place 24 inches so children grouped around can see easily and have a clear view of the flames, demonstrations, cooking, etc.

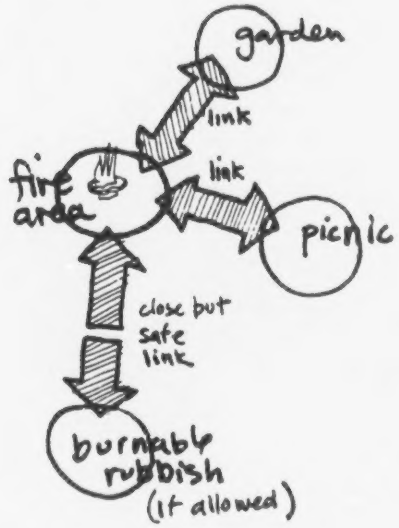
small kid + large kid + play leader


various provisions for cooking
24" raised fire area

BEST COPY AVAILABLE


① prevailing wind
smoke
② shelter
③ fire
usable by groups

- Locate the shelter area on the side of prevailing winds, or make shelter possible on any side.
- Locate fire place where gatherings of children are possible.
- Make provisions for cooking over fire.


garden
link
fire area
link
picnic
close but safe link
burnable rubbish (if allowed)

- Proximities may include:
  - Garden - use garden products to cook with, use ashes as fertilizer.
  - Rubbish - (if allowed) burnable rubbish pile located far enough away for safety.
  - Picnic - eating space for children where they can view the fire and cooking while eating.

RELATED ITEMS	ENVIRONMENTAL YARDS CHILDREN'S GARDENS ADVENTURE PLAY AREAS

718 IMAGEABILITY AND ORIENTATION

ISSUE

EXCEPTIONAL CHILDREN--THOSE WITH PERCEPTUAL OR LEARNING DISABILITIES, EMOTIONAL DISTURBANCES, OR WHO ARE RETARDED--NEED PROPER CUES TO HELP THEM PERCEIVE AND UNDERSTAND PHYSICAL SPACES, TIME, DIRECTION, AND RELATIONSHIPS.

JUSTIFICATION

Some exceptional children have difficulty finding their way through spaces because they cannot easily and quickly organize in their minds sequences of time and space. They also may have difficulty with sequences of verbal and spatial directions and with mentally forming a meaningful whole from separate experiences (Kephart, 1960; Cruickshank, 1967). They often have to accommodate themselves each time they enter a new space, which taxes their abilities (Bednar and Haviland, 1969). Therefore, the parts of an environment should be clearly presented so that the whole space can easily be recognized.

Easily understood cues can help children to develop a clear cognitive map of the environment and to relate perception to memory (Moore and Galledge, 1976).

In addition to being clear, the environment should not threaten children but rather induce them to explore it and thereby improve other cognitive abilities. Unnecessary ambiguity, stimulating to the average child but potentially confusing and frustrating to the special child, should be avoided (Bayes, 1967; Bayes and Francklin, 1969; Bednar and Haviland, 1969).

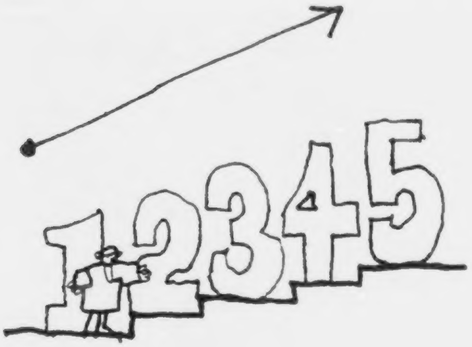
PRINCIPLE

IMAGEABILITY AND ORIENTATION

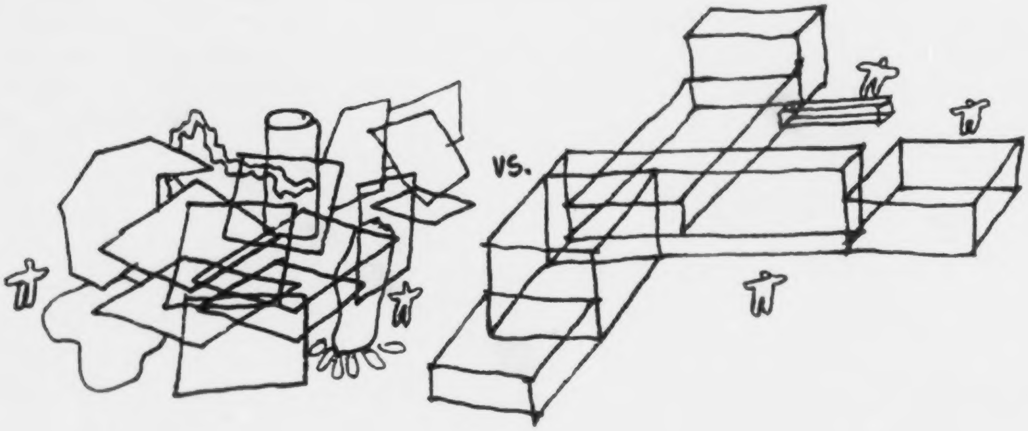
THE ENVIRONMENT SHOULD BE CLEARLY IMAGEABLE AND HAVE CLEAR ORIENTATION BASED ON VERTICAL AND HORIZONTAL CUES AND LANDMARKS.

RECOMMENDATIONS

- Cues should be provided to make the environment understandable, e.g., color and level changes, numbers, repeated representative elements, and so on.



- There should be visual consistency within spaces.



- The sequence and scheduling of activities should be clear to the child.

- Multisensory cues should be provided for children with sensory handicaps.

- There should be a range of settings with variably controlled stimuli; irrelevant stimuli should be controllable.

- Visual images should be made clear.

- As far as possible, elements with set functions and meanings should be minimized, and controlled ambiguity should be maximized.

- Spaces should be well-defined; caution should be taken when spaces are not clear and where they merge together.
- Environments should be as complex as possible without overburdening the children's cognitive abilities.
- There should be many opportunities for a variety of spatial experiences such as crawling through spaces.
- There should also be a variety of child-scaled environments which allow different movements such as straight/curved and fast/slow.
- The children must be able to personalize the environment so they can attach meaning to it.
- Where play spaces are near child-care centers, recreation buildings, or other children's centers, there should be a marked change between the indoors and the outdoors.

RELATED ITEMS	AMBIGUOUS SETTINGS AND OBJECTS BARRIER-FREE ENVIRONMENT

719 ORDERLINESS AND CONSISTENCY

ISSUE

EXCEPTIONAL AND HANDICAPPED CHILDREN ARE OFTEN CONFUSED AND EVEN THROWN INTO A HYPERACTIVE STATE BY ENVIRONMENTS WHICH ARE UNNECESSARILY AMBIGUOUS, CONTRADICTORY, AND COMPLICATED.

JUSTIFICATION

Many exceptional children have some sort of perceptual difficulty. When exposed to irrelevant stimuli, they may be thrown into a hyperactive state (Cruickshank, 1967). ORDERLINESS AND CONSISTENCY in the environment may reduce perceptual ambiguity, irrelevant stimuli, and hyperactivity, and thus may increase the conduciveness of the environment for the entire learning process. Predictability and a certain amount of simplicity may reduce the sensory-based hyperactivity and inner anxiety so common in the experience of the exceptional child (Ayers, 1972).

Although novelty, complexity, and dissonance are stimulating properties of the environment for children (Sutton-Smith, 1972), these qualities must be balanced with the special needs and limitations of special children. Applying this principle to exceptional children suggests that the environment should be subdued, but the designer must not take this too literally and leave out variety and interest in the surroundings and equipment. The reason for orderliness in the lives of such children is to avoid the over-stimulation and disorientation that easily affects them. There is a fine design line to be drawn, however, between chaos and boredom.

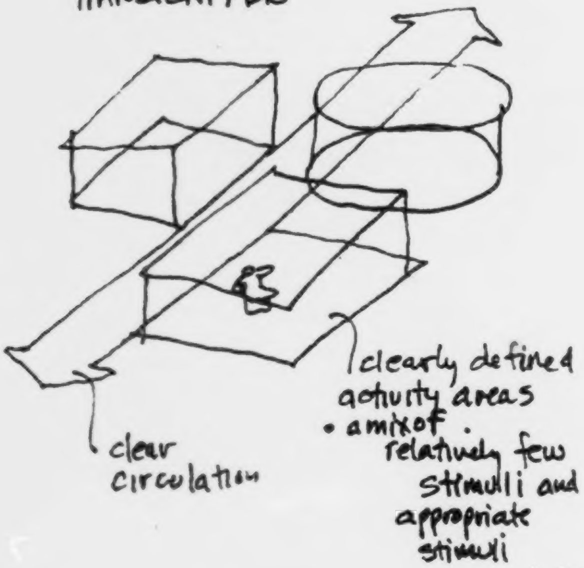
PRINCIPLE

THE BUILT ENVIRONMENT SHOULD BE ORDERLY AND CONSISTENT SO THAT IT DOES NOT CONFUSE EXCEPTIONAL CHILDREN WHO HAVE LEARNING OR PERCEPTUAL DIFFICULTIES.

RECOMMENDATIONS

- Activity areas should be simple and have a limited number of pieces of equipment.
- Irrelevant stimuli should be eliminated. This will help control children who are prone to sensory hyperactivity.

SPACES FOR
EXCEPTIONAL AND
HANDICAPPED


clearly defined
activity areas
• a mix of .
relatively few
stimuli and
appropriate
stimuli
clear
circulation

- To aid in way-finding and orientation, the environment should be straightforward and unambiguous.

- Places of sudden movements and noises should be shielded from other places where children are expected to be involved in quieter pursuits.

- As children are not stimulated to develop by environments which are monotonous or boring, the needs for orderliness and consistency must be balanced with the needs for novelty, complexity, and excitement.

720 EMOTIONAL RELEASE POINTS

ISSUE	CHILDREN REQUIRE SETTINGS OR ACTIVITIES WHICH ALLOW THEM TO EXPRESS AND RELEASE EMOTIONAL ANXIETIES, SUCH AS ANGER, TENSION, OR FRUSTRATION WITH THEMSELVES, OTHERS, OR THE ENVIRONMENT.
JUSTIFICATION	Children can become frustrated by their inability to function mentally or physically, e.g., inability to climb a ladder, to communicate successfully with others, or to cope with sensory overload. For some children, the simple joy of free play outdoors or walking through a garden will help them get away and ease their frustrations. Other children need to be coaxed into relaxing or becoming active to help them forget their troubles. When children have trouble coping with the environment, they need an area in which they can express their emotions and release their tensions and aggressions.

The release of tension and frustration is most crucial to emotional development. Social development follows as the child becomes mentally stronger in dealing with communication and emotional expression, and in dealing with physical handicaps. Motor development is an indirect achievement, although this is not the main objective; large motor development also takes place in many of the activities suggested for emotional release areas.

PATTERN

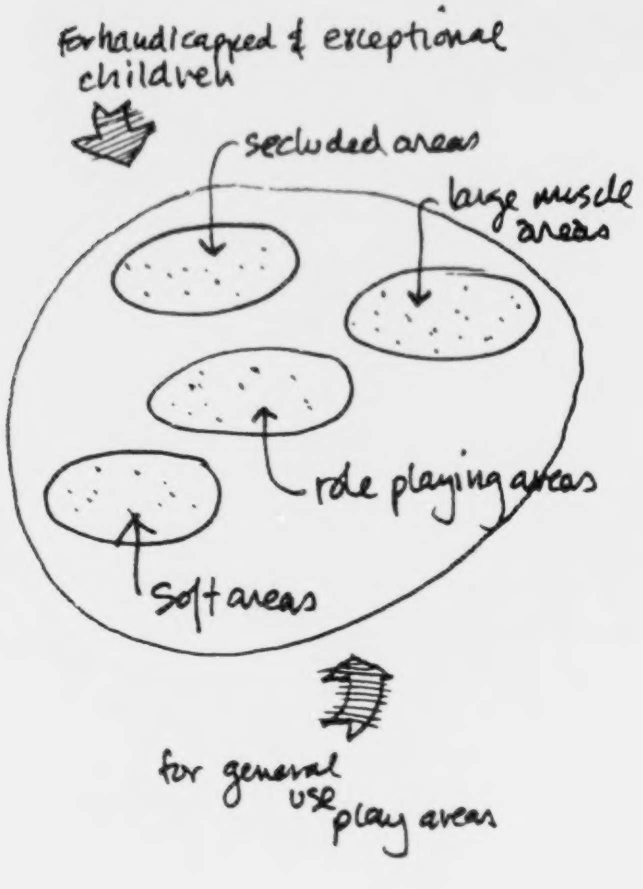
EMOTIONAL RELEASE AREAS

PROVIDE PLACES FOR CHILDREN TO BE COAXED PASSIVELY WITH MUSIC OR COLOR, OR AREAS IN WHICH THEY CAN GET FRUSTRATIONS OUT OF THEIR SYSTEMS BY ACTING OUT A ROLE. ON THE MORE ACTIVE SIDE, PROVIDE THINGS TO BUILD, KNOCK DOWN, THROW, OR KICK; AND PLACES TO RUN, FALL, JUMP, AND LET OFF STEAM.

RECOMMENDATIONS

- Provide areas where children can safely let loose.
- Provide active and passive color schemes: earthy reds and ochres are conducive to high activity; yellows are bright and cheery (Grey, 1969); light blues and grays are quieting and soothing.

- Provide secluded areas sheltered from sensory overload. (Note: some children also need to see others playing in order to let loose themselves.)
- Provide nature walks.
- Provide areas for role playing. (See AMBIGUOUS SETTINGS AND OBJECTS.)
- Provide areas with LOOSE PARTS so children can become involved in building, tearing down, and starting all over again.
- Provide soft areas where children can kick and punch away any violent agressions.


For handicapped & exceptional children
secluded areas
large muscle areas
role playing areas
soft areas
for general use play areas

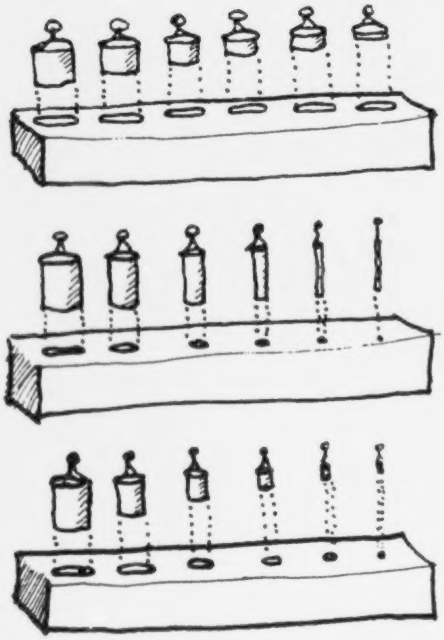
721 REPETITION AND MULTIPLE CODING

ISSUE

AN IMPORTANT PART OF CHILD DEVELOPMENT IS WHAT PIAGET CALLS GENERALIZING, RECIPROCAL, AND REPETITIVE ASSIMILATION--THE REPETITION OF FAMILIAR SEQUENCES OF BEHAVIOR AND THE GENERALIZING OF THEM TO NEW SITUATIONS.

JUSTIFICATION

The repetition of cues is important to the development of fine-motor, perceptual, and cognitive skills. Repetition of shapes, colors, textures, designs, and sounds helps maintain the child's interest in learning. It also helps the child achieve generalization, and thus apply newly learned information to other situations.



The environment needs to be designed for the varying sizes of the children, since developmental skills usually progress with age and size. The repetition of activities allows specific skills to develop by performing them on a variety of equipment.

Because every element, or group of elements is coded and explained in a variety of ways, the child's awareness, vocabulary, and mental capacity are expanded. The child learns words and ideas from cues in the outdoor environment in the same way adults learn the metric system by seeing signs on the highway and on food packages. Such repetitions of form and activity aid the child to "generalize," which is the application of what has been learned in one situation to other situations. This application ability indeed is the basis of true learning for all children, and this specific design principle is especially important for exceptional children (see Moore, Cohen, Oertel, and van Ryzin, 1979).

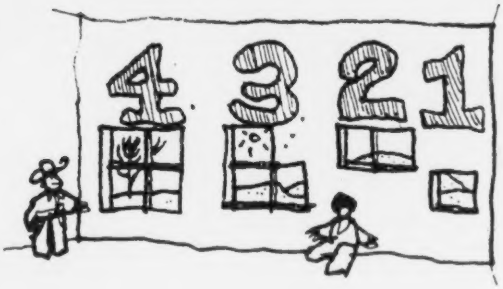
PRINCIPLE

CUES MAY HAVE TO BE REPEATED SEVERAL TIMES OVER TO HELP A CHILD GRASP A MESSAGE. MULTIPLE CODING IS THE USE OF SEVERAL CUES (COLOR, SHAPE, TEXTURE) TO IDENTIFY AN OBJECT.

RECOMMENDATIONS

- Shapes, colors, texture, and designs should be repeated in different and moderately complex ways (Cratty, 1972).

- There should be a planned amount of reduncancy, repetition, and reoccurrence of space types.
- Many similar objects should be provided (Collard, 1972).
- Equipment or objects than can be moved to create various sounds should be provided (Moran and Kalakian, 1972).
- A variety of visual stimuli and tactile surfaces should be provided (Abeson and Blacklow, 1974).
- Explain concepts or provide information about any activity cluster or specific piece of equipment.
- When using numbers, words, colors, textures, shapes, etc., provide as many ways as possible to relate the same idea or meaning.
- Colors and numbers should be used in an integrative way to reinforce what is already inherent in the environment.



722 BARRIER-FREE ENVIRONMENT

ISSUE

SINCE CHILDREN WHO ARE NOT ABLE-BODIED (SEE "EMERGING TRENDS-MAINSTREAMING") STILL HAVE THE SAME SOCIAL, COGNITIVE, AND EVEN PHYSICAL NEEDS AS ABLE-BODIED CHILDREN, IT IS OBVIOUS THAT THEIR PLAY NEEDS ARE ALSO SIMILAR. BARRING THEM FROM PLAYSPACES BY CREATING--OR NOT ELIMINATING--BARRIERS IN ACCESS, CIRCULATION, AND EQUIPMENT AMOUNTS TO STUNTING THEIR DEVELOPMENT BEYOND THE PROBLEMS THEIR PARTICULAR HANDICAP MAY IMPLY.

JUSTIFICATION

Children who have a handicap must be allowed and encouraged to develop as normally as possible, and to do this they must have access to most play opportunities other children have. Further, they must have access to other children, both handicapped and able-bodied. Research (Alexander, 1977, pp. 343-4) has shown that a child's peer group may be even more important than parents to healthy emotional development. This is especially true for handicapped children.

While not a developmental argument, one compelling reason for creating a barrier-free environment is that it is required by law in most circumstances (see "EMERGING TRENDS-MAINSTREAMING").

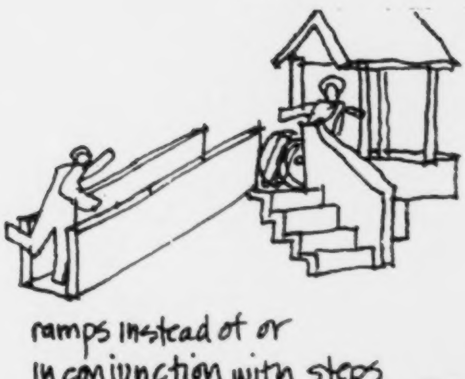
PRINCIPLE

BARRIER-FREE ENVIRONMENT

MINIMIZE BARRIERS WHILE EXPANDING ACTIVITIES IN WHICH ALL CHILDREN CAN PARTICIPATE. SOME SPECIAL ACTIVITIES MAY BE CONSIDERED WHERE USE INDICATES.

RECOMMENDATIONS

- While considering specific activity spaces, use A Playground for All Children (HEW, 1978) and ANSI 117.A (1978), Specifications for Making Buildings More Accessible to and Usable by the Physically Handicapped to add experiences which would enhance this type of activity for handicapped children. For example, "LOOSE PARTS" may be made especially rich in tactile and auditory experiences for blind children.
- Use ramps instead of, or in conjunction with, steps for children in wheelchairs or with braces, crutches, etc.

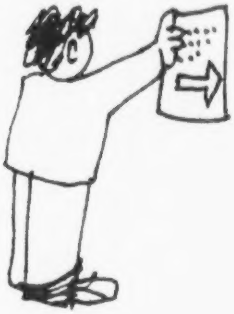


ramps instead of or in conjunction with steps

- Water fountains should have waterspouts upfront and foot-and/or hand-operated controls.
- Doors should be between 3' and 4' wide; thresholds should be flush with the floor.
- Indoor and outdoor seating furniture should have back and arm rests; the seat's depth and height should fit the specific age group of users. Picnic and other tables should have separate stool seats of various heights and distances from the table for those wearing braces, which also allows wheelchairs a closer approach; the bottom of the table should be 30" above the ground for wheelchairs or as appropriate for other seating arrangements.
- A fire pit with fire rings raised 24" from the ground provides a campfire usable and safe to everyone.
- Open field space should be free of potholes and ruts; it should be a flat, usable space.
- Provide a slide and allow for a crawling area to reach a slide, or provide a ramp with 8% maximum grade to reach the top, and a 5'x5' level platform on the top.
- A box-type swing or a tire swing is good for severly disabled children.
- The top of a sandbox should be at the same level as the ground to reduce obstacles; water and sand tables should be raised 30" above the ground for wheelchairs.
- Provide nature areas with dwarf trees that allow children to smell flowers or pick fruit; provide simple pathways and raised planting beds.
- Provide some soft surfaces which children who can't walk could crawl or roll on.

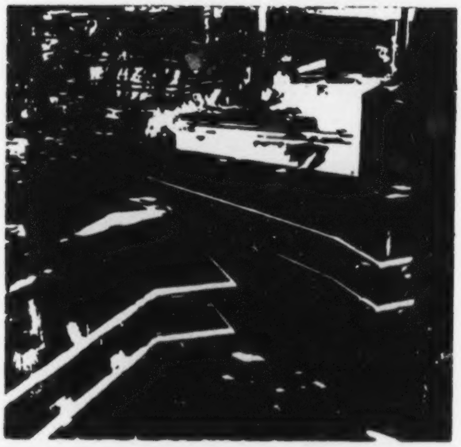
RELATED ITEMS PACED ALTERNATIVES
EMERGING TRENDS-MAINSTREAMING

touchable signs with raised letters



- Use signage with raised letters at a height children can reach.
- Wheelchair access to hills should be made easier with nonskid surfaces and downslope stop curbs.
- A child should be able to sit under an overhang and play with his arms resting in sand and water.
- Surfaces should be hard enough for wheelchairs, yet safe and nonabrasive. Use a material such as composite rubber and acrylic or 3/8"-thick "Elastaturf" on concrete.
- Youngsters with braces, crutches, or in wheelchairs cannot open back-up doors. Therefore, incorporate "tambour" type doors which fold into recessed areas of the wall.

- Children should be able to easily move from the outdoor play area to transportation pick-up points.
- A berm, fence, or sign must be no higher than 48" if an adult in a wheelchair is to see over it. The height is reduced accordingly for children.
- Trails should be of a continuing common surface; steps and/or abrupt changes are to be avoided; trails should be 5'-0" wide to allow wheelchairs to pass; and gradients should not exceed 5%.
- Ramps must not have a slope greater than 1'-0" of rise in 12'-0" of run, and should be a nonskid surface; width should be 4'-0" at least; all ramps must have handrails on each side to fit children's reach, about 16"-24" above ramp. When appropriate two parrallel handrails should be used.
- All stairs should have rounded nosing; riser 5-3/4" and tread 14"; handrails should be of the height described in the preceeding recommendation.
- Rest areas should be provided especially where gradient is greater than recommended.



SITE DETAILS 800

This section includes specific criteria which are applicable to the design and landscaping details of the play area.

Some of the patterns (805, 807, 808) apply to the preparation of the site before any construction takes place on the surface, as well as to the design of specific features of the play area and equipment.

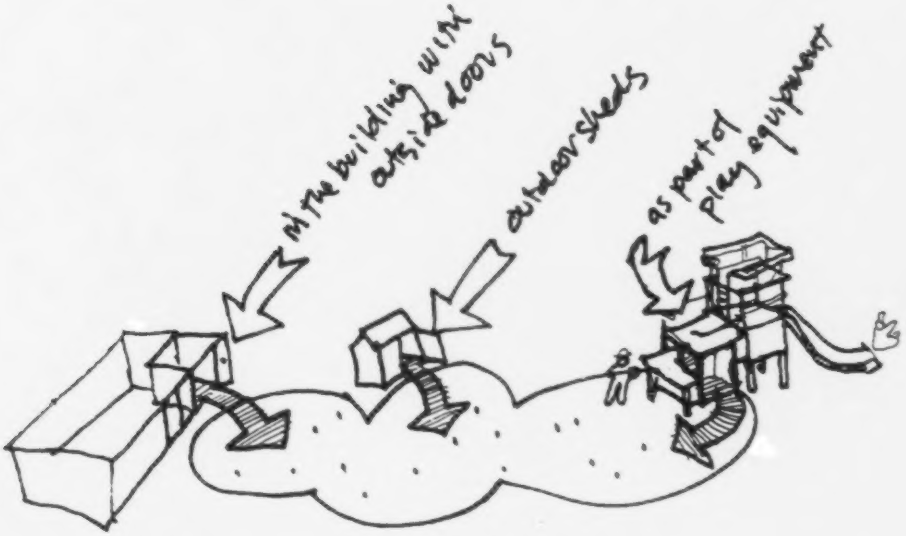
The other criteria deal with design features of specific play areas or the site in general.

801 Outdoor Storage
802 Berms as Play Equipment
803 Landscaped Barriers
804 Landscaping Materials
805 Planting and Ground Shaping
806 Snow and Ice
807 Appropriate Utilities
808 Positive Drainage

They do not include standard site design details--which are covered adequately in any standard landscape architecture or site design textbook or reference, like Kevin Lynch's Site Design, Albert Rutledge's Anatomy of a Park, J. H. Callender's Time-Saver Standards, Joseph de Chiara's Time Saver Standards for Building Types (Recreation), or J. de Chiara and L. F. Koppelman's Site Planning Standards. Rather, these criteria focus on site development criteria as relates to the unique needs of the developing child.

801 · OUTDOOR STORAGE

ISSUE	IT IS TIME CONSUMING AND OFTEN VERY DIFFICULT FOR CHILDREN AND STAFF TO MOVE BULKY TOYS OUTDOORS.
JUSTIFICATION	Outdoor areas need outdoor storage space. This saves time in preparing for play and is more convenient for cleanup. Storage which is directly accessible to outdoor play areas reduces time wasted in transporting toys from indoor settings (Prescott and David, 1976). If toys and equipment are easily accessible, the child's own experience of taking them out and returning them with a mimimum of supervision will aid in the development of responsibility.


in the building with outside doors
outdoor sheds
as part of play equipment

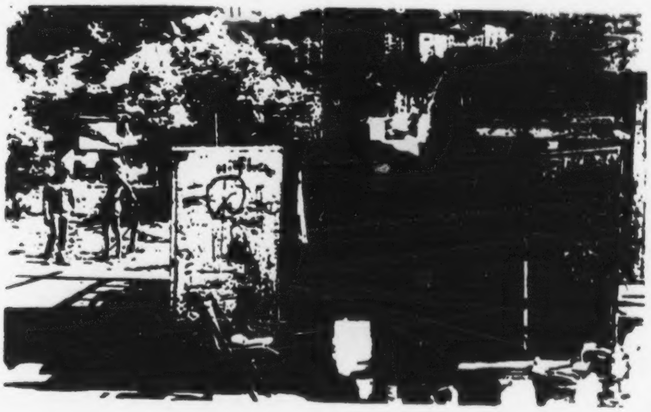
PATTERN	OUTDOOR STORAGE SECURE, CHILD-SCALED STORAGE SPACES WHICH ARE DIRECTLY ACCESSIBLE TO PLAY AREAS SHOULD BE PROVIDED FOR INDOOR AND OUTDOOR PLAY EQUIPMENT AND FOR OUTDOOR MAINTENANCE EQUIPMENT.

RECOMMENDATIONS

- Storage should be child-scaled.
- Storage should be vandalproof and weathertight.
- In play areas where there are no adjoining indoor spaces, storage and play shelters should be combined so that playthings are available without leaving sheltered play areas.
- Texas A & M (1969) recommends 600-800 cu. ft. of enclosed storage for large and small outdoor play equipment.

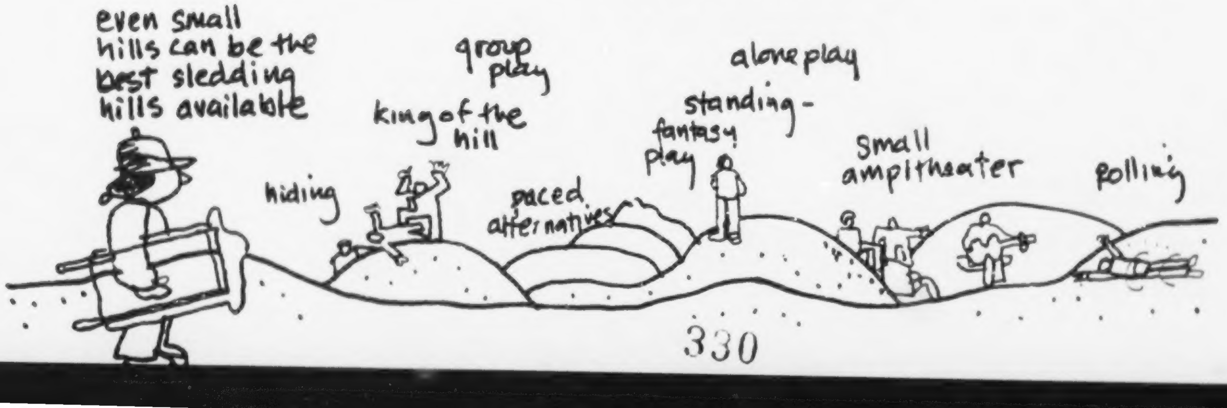
RELATED ITEMS

DEGREES OF SHELTER



802 BERMS AS PLAY EQUIPMENT

ISSUE	MANY ACTIVITIES CHILDREN ENJOY TAKE PLACE ON A HILL OR HILLSIDE. SMALL HILLS OR BERMS ARE INEXPENSIVE PIECES OF "EQUIPMENT" WHICH CAN BE PROVIDED IN A CHILD-CARE SETTING.
JUSTIFICATION	Children play king-of-the-hill, they roll down a hillside, they climb up, they slide down on grass or snow: these activities cannot take place on flat land. Hillsides can be enjoyed by all age groups, including people with physical handicaps. In fact, berms are a classic example of PACED ALTERNATIVES. Small hills (or berms) provide a vantage point for viewing without danger of falling, and can serve also as natural amphitheaters. Observation showed that where hills or berms existed in play areas, they were a highly used feature (Travel Report, 1978).
PATTERN	BERMS AS PLAY EQUIPMENT USE BERMS TO PROVIDE PLAY EXPERIENCES OF CLIMBING, VIEWING, ROLLING, SLIDING, ETC. ("IF YOU CAN'T DESIGN IT ... BERM IT.")
RECOMMENDATIONS	• Provide a grassy hill (either natural or constructed) as part of each play area. • A minimum of one or two berms 4-5' high (200-400 sq. ft.) with varying slopes of 1:3, 1:4, and 1:5 would be sufficient for the activities which are likely to take place.
RELATED ITEMS	PACED ALTERNATIVES LANDSCAPING MATERIALS


even small hills can be the best sledding hills available
group play
king of the hill
hiding
paced alternatives
alone play
standing - fantasy play
Small ampitheater
Rolling

803 LANDSCAPED BARRIERS

ISSUE

ADULTS NEED TO BE ABLE TO SEE SMALL CHILDREN IN ORDER TO FEEL COMFORTABLE WHILE THEY ARE OUT OF IMMEDIATE REACH (SEE VIEWS TO AND FROM PLAY AREAS). ALSO, PARENTS WANT SMALL CHILDREN TO PLAY IN AN ENCLOSED SPACE WITH CONTROLLED ACCESS FOR SAFETY (SEE ACCESS AND CIRCULATION).

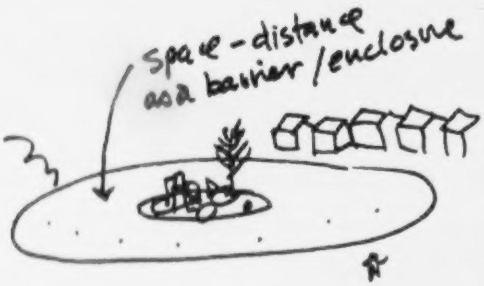
SMALL CHILDREN, ON THE OTHER HAND, NEED TO FEEL ENCLOSED, PRIVATE, AND SAFE WHILE PLAYING.

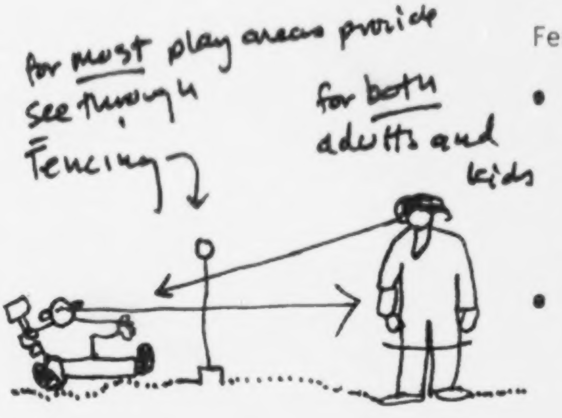
JUSTIFICATION

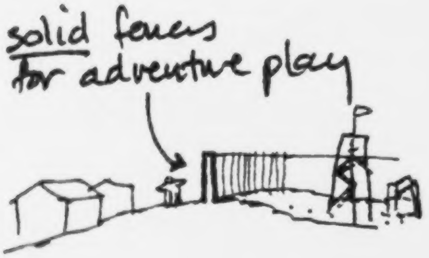
Various barriers are available which can create child-scale spaces which adults can see over. Earthform and plantings have been discussed. (A caution concerning mounds: these will not actually be a barrier to children unless used in conjunction with other barriers.) Another barrier may be created by raising levels around the perimeter with logs, railroad ties, etc. While this is attractive to adults, raising levels high enough to be a barrier to children makes an uninteresting scene for the child.

Fencing of various types may be used:

- See-through fence, while providing for adult view and protection of children, doesn't lend itself to a private, enclosed feeling unless used in conjunction with something else. Chain-link fences may make a play yard look like a prison yard.
- Solid fence, while lacking the "climability" of an open fence, does provide for more of children's needs. A solid fence is essential for ADVENTURE PLAY AREAS.
- Wood: consider the expense, maintenance, and life expectancy. It is fairly flexible and changeable.
- Masonry: expensive to build, not flexible. Maintenance in cold climates may be costly.







PATTERN LANDSCAPED BARRIERS

USE A VARIETY OF LANDSCAPING MATERIALS TO DELINIATE BOUNDARIES OF PLAY AREAS AND TO PROVIDE A BUFFER WHERE NEEDED.

RECOMMENDATIONS

- Choose barriers which will give children a sense of enclosure and privacy (2'-3' high).
- Make sure adults can see children within the enclosure when adults are standing.
- Enclose the perimeter with a barrier that small children will not cross.
- Use barriers to reinforce activity patterns and circulation within the play area.

Concluding the discussion of landscaping materials, the following quote from Richard Dattner (1969) may give designers some clues about landscaping materials to include:

> *A playground should be like a small-scale replica of the world, with as many as possible of the sensory experiences to be found in the world included in it. Experiences for every sense are needed, for instance: rough and smooth objects to look at and feel; light and heavy things to pick up; water and wet materials as well as dry things; cool materials and materials warmed by the sun; soft and hard surfaces; things that make sounds (running water) or that can be struck, plucked, plinked, etc.; smells of all varieties (flowers, bark, mud); shiny, bright objects and dull, dark ones; things both huge and tiny; high and low places to look at and from; materials of every type, natural, synthetic, thin, thick, and so on. The list is inexhaustible, and the larger the number of items on it that are included, the richer and more varied the environment will be for the child.* (p. 44)

RELATED PATTERNS

VIEWS TO AND FROM PLAY AREAS
SEMI-ENCLOSED PLAY SPACES FOR YOUNG CHILDREN

804 LANDSCAPING-MATERIALS TO FIT ACTIVITIES

ISSUE

LANDSCAPING MATERIALS ARE ESSENTIAL IN THE CREATION OF A DESIRABLE ENVIRONMENT FOR PLAY. IN THE PAST, MANY PLAYGROUND BUILDERS PUT AN EMPHASIS ON EQUIPMENT, THUS THE VITAL IMPORTANCE AND POTENTIAL OF LANDSCAPING MATERIALS WAS USUALLY IGNORED.

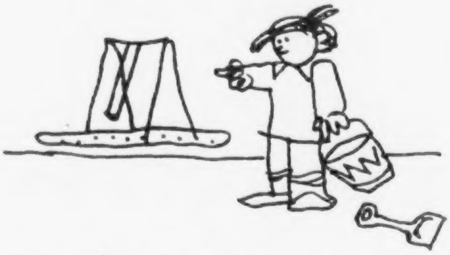
JUSTIFICATION

In creating a play environment, particular attention must be paid to surface materials, plantings, landforming, water, fencing or surrounding structures, and their placement in order to achieve results which are compatible with the relevant play activity.

Surfacing is perhaps most important from the standpoint of pragmatic use and safety factors.

SAND

the only sand available for play



shouldn't be under the swings!

While excellent as a play material, sand can also be used for surfacing. Sand is relatively soft on impact, but several sources warn that use of sand under very active areas may lead children to also use it for quieter play activities, and be in danger from balls, swings, running, etc. Another caution from Bengtsson (1970) is the following:

> *But what about dogs and cats? This is the usual comment when sandpits are discussed. To this, I can only say that the risk of the child encountering animal excrement during play is equally inconvenient whether we have sand areas or not. As long as children and animals use the same area, suitable fencing is the only remedy.* (p. 180)

Further, sand may cause undue abrasion on clothes and equipment.

> *Wood chips should be placed over sand because the sand gets into the children's clothes and grinds both the finish and the actual equipment--wood chips soften with age.* (Travel Report, 1978, p. 97)

ASPHALT

While asphalt is harder than sand, it is still softer than concrete. Where hard surfaces are required for wheel toy play, INFORMAL PAVED AREAS, and HARD-SURFACE PLAYING AREAS, asphalt is preferable. Because asphalt dries more quickly than sand, dirt or grass after rain or snow, place it where kids will play first. However, large stretches of asphalt are extremely unpleasant in hot weather and may become tacky, (Public Housing Design - Federal Public Housing Agency, 1946).

Asphalt is much too hard a surface to use underneath active equipment such as swings, slides, climbing frames, etc. Danger from falls is greatly increased by a hard surface in these areas.

DIRT

Lady Allen (1968) suggests the following:

> *Plain earth should not be overlooked as a surfacing material. When mixed in the proper proportions of clay, sand and silt, it makes a surface more resilient than asphalt. No doubt there will be complaints that children soil their clothes when they play on earth surfacing, but after all, if children are to play, they must be expected to get dirty sometimes. Country children play in fields and ditches, and get dirty--why not town children?* (p. 34)

GRAVEL AND WOOD CHIPS

gravel & wood chip's

> *Another material that may be used in certain intensive-use areas is pea-gravel which is inexpensive, impact-absorbing, and requires little maintenance. Wood chips have been used for impact areas successfully and are available in most parts of Canada.* (Central Mortgage and Housing Corporation, 1978, p. 28)

A caution: gravel other than pea gravel may have sharp edges and be unsuitable for use in play areas.

GRASS

Almost all sources suggest some use of grass:

> *No one has yet discovered the ideal surfacing, although a mixture of grass and paving would seem the obvious compromise. The most pleasant surface is, of course, grass, but unless the area is large this will soon be reduced to mud--pleasant perhaps for the children but less so for their mothers. When grass is used as the surface material, some wear and tear will inevitably occur; there should be a sum of money allocated for re-laying and renewal. If the grass is scythed once or twice a year, the children will take pleasure in playing with the dried grass.* (Lady Allen, 1968, p. 34)

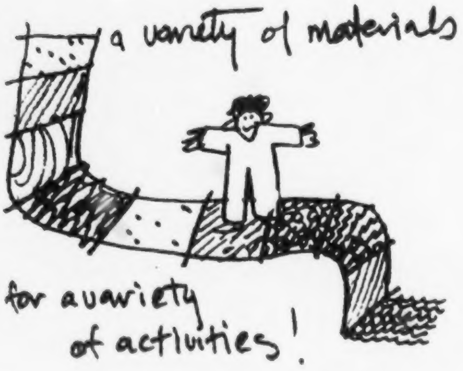
> *Grass is suitable for only a small range of activities, particularly after rain, so it should be located so that the sun can dry it as quickly as possible. Also, to ensure that the overall intensity of use will be low and evenly distributed, access paths should run parallel to it, roads leading directly into the space should be avoided, and barriers should be strategically located to avoid undesirable shortcuts.* (Pollowy, 1977, p. 139)

> *Dried out grass which turned brown through error has proved to be an excellent non-maintenance, pleasant yellow-coloured surface, lasting several seasons.* (Central Mortgage and Housing Corporation, 1978, p. 28)

PATTERN LANDSCAPING MATERIALS TO FIT ACTIVITIES

USE A VARIETY OF SURFACING MATERIALS, CHOOSING EACH TO FIT SPECIFIC ACTIVITY AREAS. CONSIDER IMPACT ON CHILDREN AND THE PLAY ACTIVITY, THE COMPATIBILITY OF TEXTURE, COST, MAINTENANCE, AND DURABILITY.

RECOMMENDATIONS


a variety of materials
for a variety of activities!

- Use softest surfaces where children are likely to tumble, roll, jump, etc.
- Do not double-function sand play and sand as surface under active areas. Separate these functions clearly, perhaps by use of wood chips over sand in active areas.
- Use grass in lower-traffic areas, and not under active equipment.
- Use pavement, e.g., asphalt where wheel toy areas are desired

RELATED ITEMS POSITIVE DRAINAGE

805 PLANTING AND GROUND SHAPING

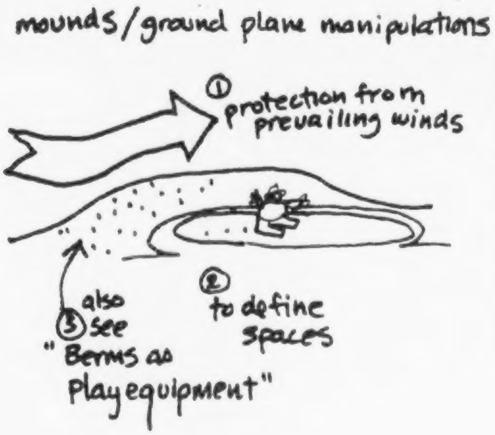
ISSUE

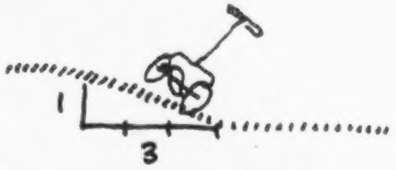
THE BASIC LANDSCAPING MATERIALS--GROUND MANIPULATION, TREES AND OTHER PLANTS, NATURAL FEATURES, AND WATER--ARE ELEMENTS WHICH CAN BE SUPPORTIVE TO A VARIETY OF PLAY AND CHILD NEEDS. LANDSCAPING MATERIALS CAN PROVIDE SAFETY, DEFINE ZONES, PROVIDE SHADE, VARIETY, SLOPES, SECLUSION, AND MANY OTHER QUALITIES. FOR EXAMPLE, "A SENSE OF SECURITY AND CALM CAN EASILY BE ATTAINED BY CAREFUL PLANTING AND GROUND-SHAPING," (LADY ALLEN, 1968).

JUSTIFICATION

MOUNDS

As many sources point out, mounds provide play areas, safe bases for slides, interesting climbing areas, winter sledding and sliding, as well as helping to define spaces. For small children, mounds can be small (5-6 ft. high) and still give play experiences and protection. Placed on the side of prevailing winds, mounds can give protection without cutting off sunlight. Maintenance of mounds should be considered--grass could be difficult to maintain if the slope is more than one to three (Lady Allen, 1968). (Also see BERMS AS PLAY EQUIPMENT.)


mounds/ground plane manipulations
① protection from prevailing winds
② to define spaces
③ also see "Berms as Playequipment"



For ease of cutting a maximum slope of 1 to 3 is recommended

BOULDERS AND ROCKS

Also useful for climbing and exploration, rocks and boulders may be used to define activity areas, circulation spaces, and provide seclusion and protection for small children.

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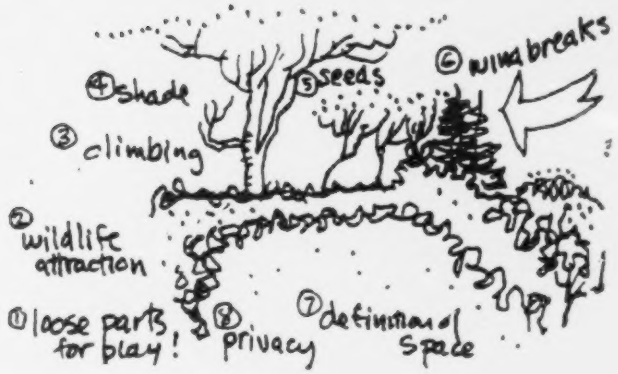
PLANTINGS

Trees and shrubs may be used to provide:

- Shade: Use only deciduous trees, so sunlight won't be cut off in winter.
- Wind break: Evergreens continue to shelter in winter. Deciduous trees only work when leaves are on them.
- Circulation and area definition: Many hedge-type plants can be trimmed at low heights so as not to impede VIEWS TO AND FROM THE PLAY AREA.
- Climbing: Use low-branching deciduous trees.
- Privacy: Room-size spaces can be achieved with hedges, bushes, etc.
- Wildlife attraction.
- Seeds, flowers, leaves, cones, etc., can become play materials (see LOOSE PARTS).

Plant materials provide many things in landscape design


④shade
⑤seeds
⑥wind breaks
③climbing
②wildlife attraction
①loose parts for play!
⑧privacy
⑦definition of space

FLOWERS

Both cultivated and wild flowers can be used. For unsupervised play areas, wildflowers would seem the best choice; they:

- require little or no care;
- needn't be protected from children;

- provide smell, taste, color, shape, and growing experience;
- attract wildlife, insects, etc.

Gardens may be planned in play areas which have adult supervision (see CHILDREN'S GARDENS).

flowers
wild flowers have many virtues

PATTERN

PLANTINGS AND GROUND SHAPING

USE LANDSCAPING ELEMENTS TO FULFILL REQUIREMENTS OF SPECIFIC PLAY AREAS; INCLUDE FORMS OF PLANTS AND SURFACES WHICH ARE CONSISTENT WITH DESIRED ACTIVITIES.

RECOMMENDATIONS

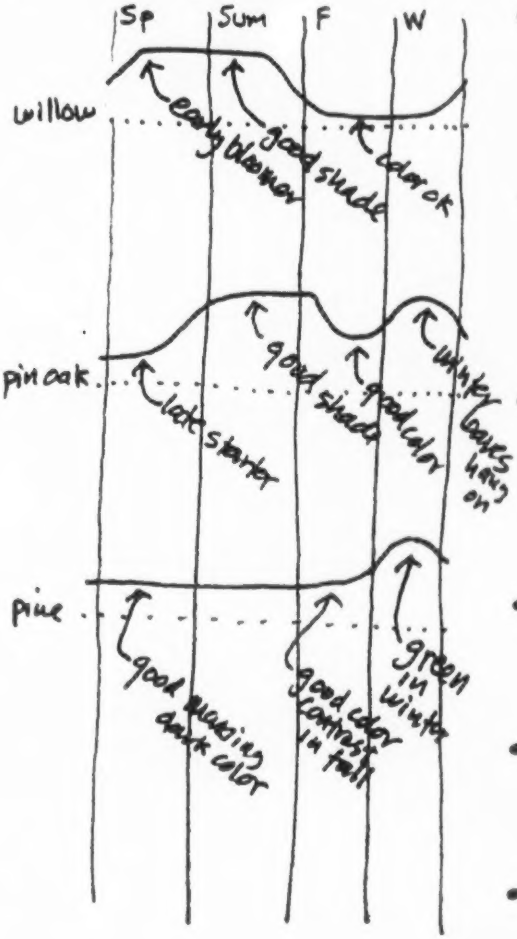
- Shape the earth to provide variety suitable to activities desired.
- Use earthforms, boulders, and plantings to provide shelter, privacy, and circulation and activity separation.
- When choosing plantings, consider:
    - climate
    - growth habits (rate, size, shape, etc.)
    - contributions at various seasons
    - contribution to activities desired

Suggestions on early plant care from the Central Mortgage and Housing Corporation (1978):

- *Preserve only healthy and sturdy stock, and when selecting new plantings, take into account the growing characteristics and the natural habitat needed by the species. Obtain the most mature trees and shrubs possible within the budget.*
- *If existing plant material is to be retained, the water table and ground surface must be kept at their original levels to avoid an inadequate supply of water or suffocation of the plants.*

each plant has its own seasonal & yearly personality

some examples


Sp
Sum
F
W
willow
early bloomer
good shade
color ok
pin oak
late starter
good shade
good color
winter leaves hang on
pine
good massing dark color
good color contrast in fall
green in winter

- *To avoid injury to the roots, areas under the canopy of existing trees and shrubs should be protected from heavy equipment and storage of building materials during the construction phase.*
- *To help provide additional protection for the plants, use combinations of trees, shrubs, and small plants in clumps rather than scattering them singly over the site.*
- *if appropriate, certain areas might be left in a natural state without mowing or other maintenance activity, to allow wild flowers, shrubs, trees, and animals to establish themselves over a period of time.*
- *Finger-repellent shrubs can be used to control access or protect more fragile planting, but they should never be used where preschoolers might accidentally tumble against them.*
- *Inexpensive, temporary low rail fencing can be placed around planting as protection until it reaches sufficient maturity.*
- *Plants with poisonous leaves, branches, roots, fruit or flowers should not be used for reasons of safety.*
- *Provision for adequate maintenance of plants is essential and must be considered in the design of the play space.* (p. 27)

Suggestions on plant care from Robin Moore:

- *watering of certain trees and plants until their root systems had a chance to spread out*
- *pruning trees, to keep balance of the various communities while slower-growing plants were taking hold, and to eliminate lower weak branches damaged by too early climbing, etc.*
- *staking and tying up trees*

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> - *assisting the formation of paths by simple, rough fences, and the formation of meadows by interrupting some paths*
>
> - *replanting certain species as more was learned about the conditions under which they would grow*
>
> - *leaving a dark corner to grow over thickly and provide places where children could hide out*
>
> - *clearing brush from near ponds to provide space for study and exploration of the pond ecosystem* (p.
>
> *Robin Moore did say that you could simply let a yard go and it would do its own thing, but that in order to develop a varied and rich set of eco-communities in a small space, it is necessary to practice resource management. In interviews, the children obviously recognized and respected this management.* (Travel Report, 1978, p. 160)

RELATED ITEMS

BERMS AS PLAY EQUIPMENT
LANDSCAPING MATERIALS
CHILDREN'S GARDENS
LOOSE PARTS

806 SNOW AND ICE PLAY TRANSFORMATIONS

ISSUE

A NATURAL ELEMENT WHICH CHILDREN IN NORTHERN CLIMATES EXPERIENCE AND ENJOY IS SNOW AND ICE.

JUSTIFICATION

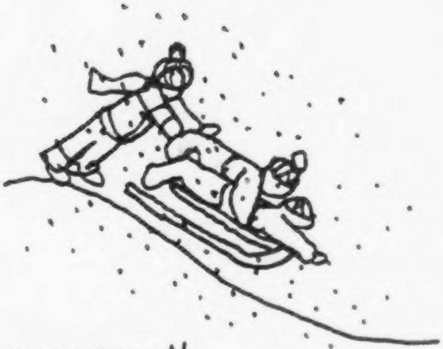
Snow and ice in winter provide many of the play experiences offered by other seasonal elements. Snow is analogous to sand for building, shaping, sculpting, feeling. Snow has the additional virtue of taste.

Snow and ice also provide opportunities for large muscle activities such as sledding, sliding, climbing, snowballing, fort building, and snow fights. In addition, snow houses built by children offer good retreat spaces and quiet play areas.

Many snow activities such as snowballing, fort building, snowman construction, and snow fights are social activities which encourage participation by several children.

Snow and ice also have certain virtues inherent in other natural elements such as aesthetic pleasure and curiosity stimulation. Because of its ambiguity as a play element, snow can encourage creative and dramatic play.

Thus, snow and ice create opportunities for extending the outdoor play season through the winter, and provide positive activity alternatives for children in northern climates.



even small hills can be fun for young children to sled on or slide on

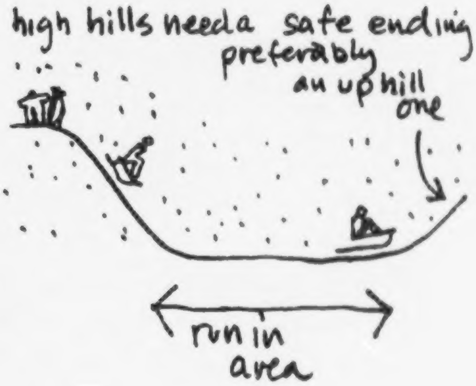
PATTERN

SNOW AND ICE PLAY

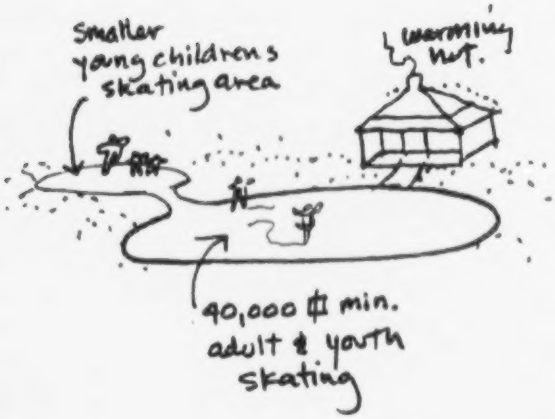
OUTDOOR ACTIVITY SPACES WHICH DOUBLE-FUNCTION TO RESPOND TO SEASONAL CHANGES CONTAIN AREAS FOR BOTH LARGE AND SMALL GROUPS. SURFACE MATERIALS MUST ACCOMMODATE SLIDING, SKATING, SLEDDING, AND SNOW MOUNDING ACTIVITIES.

RECOMMENDATIONS

- Plan the play space in colder climates to be usable in winter for snow and ice play, e.g., water play areas can become ice skating/sliding areas. (For small children, keep ice surfaces small to discourage older children from monopolizing them (Central Mortgage and Housing Corporation, 1978).


high hills needa safe ending preferably an up hill one
run in area

- Plan mounds in the play area which can be used for winter sledding, or designate hills as sledding hills and plan for a "run in" area.
- Orient walls or hedges (or temporary "snow fences") so that the wind will drift the snow into berms which children can climb up, slide down, carve into, etc.
- Plan to have large trees in the area; snow will drift in circles around them leaving dish-shaped hollows around the trunks--sheltered places big enough for two children's quiet play.
- Plan storage of sand play equipment so that items such as buckets and shovels will be accessible in winter for snow play.
- Provide some type of sliding/sledding equipment storage.
- Ice skating areas for adults and youths should be at least 40,000 sq. ft.
- Warming sheds are recommended at community ice skating areas.


smaller young childrens skating area
warming hut.
40,000 ft min. adult & youth skating

RELATED ITEMS DEGREES OF SHELTER
AMBIGUOUS SETTINGS AND OBJECTS

807 APPROPRIATE UTILITIES

ISSUE

SEVERAL SITE DETAILS SUPPORT BASIC NEEDS OF THE USERS AND THEIR PLAY ACTIVITIES. AMONG THESE ARE OUTDOOR BATHROOMS, WATER FOUNTAINS, AND LIGHTING.

JUSTIFICATION

OUTDOOR BATHROOMS

Especially for very young children, quick access to bathrooms in very close proximity to the play areas is necessary. Even in neighborhood play areas very near the home, outdoor toilets are as important as they would be in play areas near shopping, adult activities, and other centralized locations.

WATER FOUNTAINS

Ledermann and Trachsel (1968) suggest that water fountains for drinking water should be incorporated into water play areas in order to avoid drinking of unsanitary water. Drinking water becomes increasingly important where children are out of "home range" and in places and periods of considerable heat.

LIGHTING

There appears to be no literature on lighting for preschool outdoor play. It seems that most designers and researchers feel that preschoolers will be at home after dark. Older children clearly spend some time after dark playing outdoors.

Some lighting provisions which might apply to outdoor play areas are exterior lighting on dwellings, lighting in play shelters for dark rainy days, and lighting preschool areas adjacent to adult activity areas where parents take children after dark.

PATTERN

APPROPRIATE UTILITIES

ACCESSIBLE AND PROTECTED BATHROOMS, DRINKING FOUNTAINS, AND OUTDOOR LIGHTING SHOULD BE PROVIDED IN APPROPRIATE LOCATIONS.

RECOMMENDATIONS

- Outdoor toilets should be provided in any play area, especially where small children cannot get home quickly to use the bathroom.
- Drinking-water fountains for children and adults should be provided in all play areas, especially where easy access to home is not available.
- Drinking fountains for children can be an attractive part of water play areas and may help keep young children from drinking less sanitary water.
- Lighting should be carefully considered for all outdoor areas, but included only where activity warrants the expense.
- Fixtures and facilities for outdoor toilets, drinking fountains, and outdoor lighting should be sturdy, protected, and located in places which discourage abuse and vandalism.

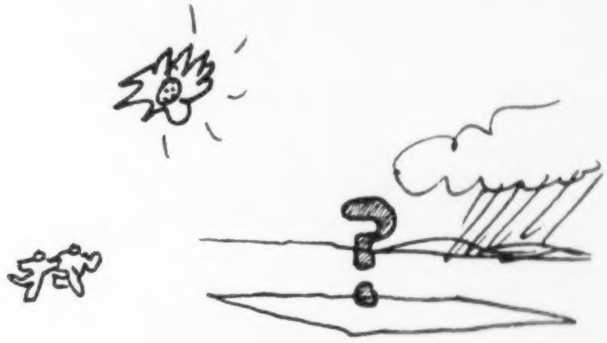
RELATED ITEMS

WATER PLAY AREAS
DEGREES OF SHELTER

808 POSITIVE DRAINAGE

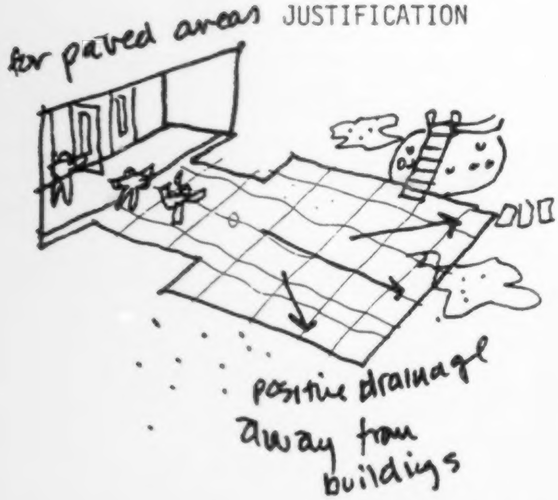
ISSUE

CHILDREN WHO HAVE BEEN COOPED UP BECAUSE OF RAIN, SNOW, OR OTHER PRECIPITATION WILL WANT TO USE OUTDOOR PLAYSPACES AS SOON AS THE PRECIPITATION STOPS. THEY WILL NOT WANT TO WAIT A DAY OR TWO FOR THE PUDDLES TO DRY.



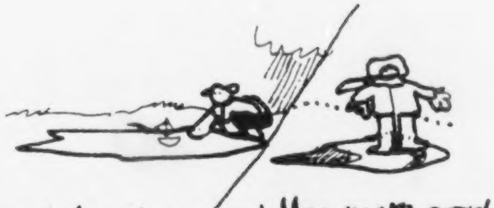
As the sun comes out
and the storm blows
away
will there be a place
to play?
or will everyone have
to wait a day
for the mud to
go away.

JUSTIFICATION



Good drainage is extremely important for a preschool play area. The play space should be designed to dry out as quickly as possible after a rain, as mothers will discourage their children from playing in an area that is wet and muddy. Sand areas in particular need to be well drained.

Play spaces should be located and graded to drain naturally into catch basins on the site or into dry wells if underground utilities are not adequate or near the site. (Central Mortgage and Housing Corporation, 1978, p. 29)



puddles & icy puddles make good play areas if they are where they should be!

> *Where ground conditions do not allow the water to run away naturally, draining the sand area is important. In clay ground, the pit excavated for a sand playground is like a well, and the water must be led away. The child has no objection to a sand area that is like a paddling pool during wet periods. Quite the contrary! The water immediately gives the area new possibilities for play: it can be channelled into endless canals, formed into lakes and even small waterfalls. But mothers decidedly do not approve of this kind of play, particularly during the colder weather.* (Bengtsson, 1970, p. 180)

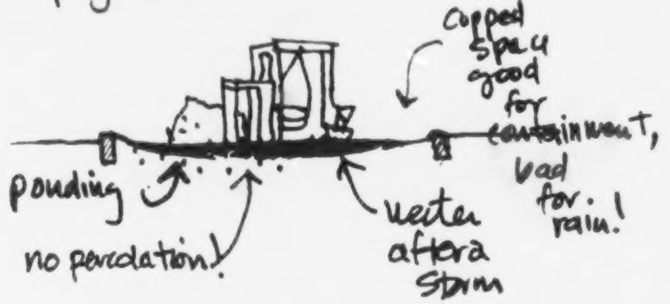
Lady Allen of Hurtwood (1968) suggests methods for draining sand areas where natural drainage is inadequate:

> *The drainage of sand-pits can be arranged by placing 1 foot of broken brick on the bottom of the pit, and then 4 inches of quarry rejects 2 inch gauge (a form of pebble), covered by a 2-inch layer of quarry rejects ½ to 1 inch guage. The sand is then placed on top. If a few pebbles come up through the sand no harm is done. Land drains must lead to a soakaway or be connected with the drainage system. Another method is to place concrete slabs with open joints on ash above brick rubble. The water will seep through the joints into the ash bed below. A third method is to lay a sloping bed of concrete with a drainage hole or holes at the lowest level leading to a land drain or to a soakaway. In this case it is important to arrange a sand-trap to prevent the sand from being swept down the drainage holes and blocking them. The traps are easily lifted out for cleaning.* (p. 37)

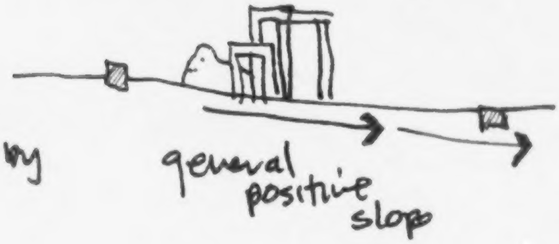
AVAILABLE

for sandy or "barked" areas
for play areas

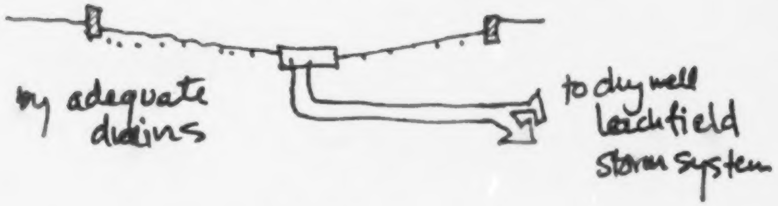
NO


cupped space good for containment, bad for rain!
ponding
no percolation!
water after a storm

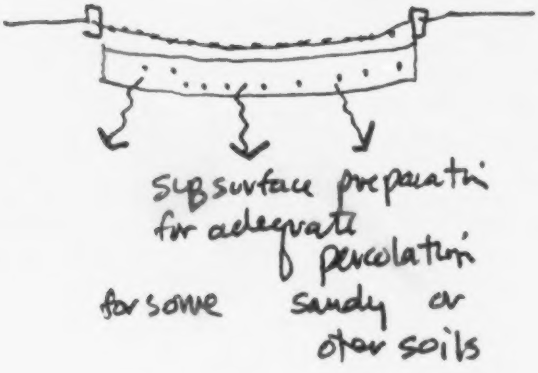
YES


by
general positive slope

YES


by adequate drains
to dry well
leachfield
storm system

YES


subsurface preparation for adequate percolation
for some sandy or other soils

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PATTERN

POSITIVE DRAINAGE

USE THE PROPER MATERIALS AND SLOPES TO ACHIEVE QUICK AND POSITIVE DRAINAGE.

RECOMMENDATIONS

- Put quickest drying areas (e.g., paving) closest to entry of playspace, and slowest drying (e.g., dirt) farthest from entry.
- Whenever possible, choose sites which have natural drainage patterns which cause them to dry quickly after rain, snow, etc.
- Don't use concrete curbs around sand areas--unless you use subsurface drainage--they prevent rainwater from escaping.
- When altering the site with mounds, pits, etc., provide desirable drainage patterns.
- When positive drainage cannot be effected in other ways, use technical means such as Lady Allen (1968) suggests to assure positive drainage.

RELATED ITEMS

LANDSCAPING MATERIALS TO FIT ACTIVITIES
DEGREES OF SHELTER

UNIVERSITY of WISCONSIN
UWMILWAUKEE

Center for Architecture and Urban Planning Research P.O. Box 413 Milwaukee, WI 53201

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